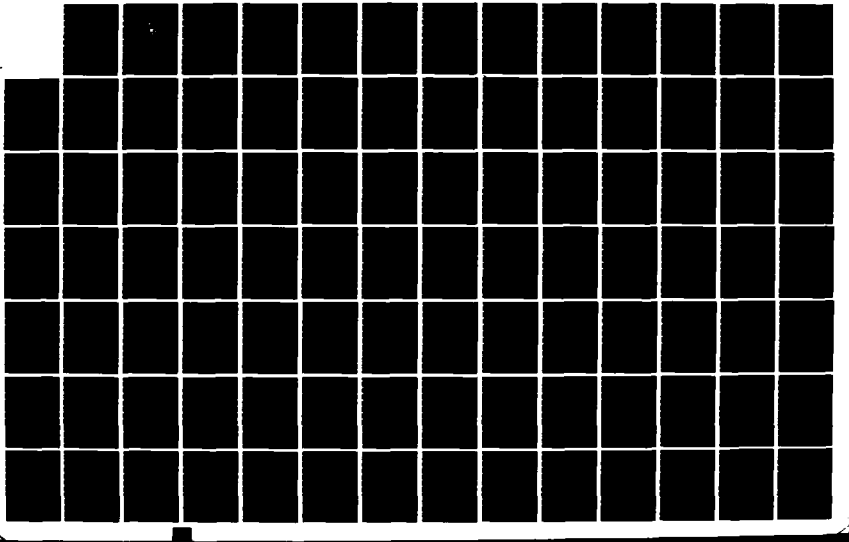
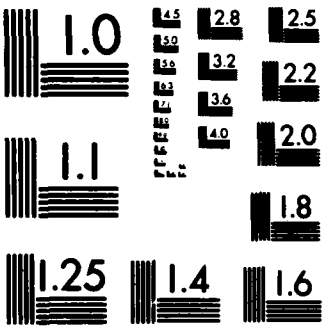
AD-A136 744 NAVAL CONSTRUCTION FORCE READINESS TRAINING PEACETIME CONSTRUCTION AND TH..(U) NAVAL POSTGRADUATE SCHOOL MONTEREY CA W A DOS SANTOS SEP 83 1/2

UNCLASSIFIED F/G 5/1 NL





(2)

NAVAL POSTGRADUATE SCHOOL
Monterey, California

AD A136744

THESIS

NAVAL CONSTRUCTION FORCE READINESS
TRAINING, PEACETIME CONSTRUCTION AND THE WAR MISSION:
A QUESTION OF CONGRUENCY

by

William A. Dos Santos

September 1983

Thesis Advisor: Kenneth J. Euske

Approved for public release; distribution unlimited.

84 01 12 023

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO. AD-A136744	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Naval Construction Force Readiness Training, Peacetime Construction and the War Mission: A Question of Congruency		5. TYPE OF REPORT & PERIOD COVERED Master's Thesis: September 1983
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) William A. Dos Santos		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Naval Postgraduate School Monterey, California 93943		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Naval Postgraduate School Monterey, California 93943		12. REPORT DATE September 1983
		13. NUMBER OF PAGES 123
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report)
		15a. DECLASSIFICATION/ DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Mission
Readiness
Evaluation
Naval Construction Force

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

In the study, the author examines the congruency between Naval Construction Force (NCF) peacetime training and construction tasking policies and the war mission. Following an introduction of NCF organizational relationships and organizational components, the author provides a brief history of the NCF. The NCF mission is identified by examining several key documents →

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

S/N 0102-LF-014-6601

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

while training and construction tasking policies are abstracted from COMCBPAC/COMCBLANT/COMRNCF Instruction 1500.20E and OPNAV Instruction 5450.46.G, respectively. The mission is redefined by the author in terms of 'critical mission parameters' or constraints. The analysis then examines the degree of support contained in the policy documents for contraposing policies to the critical parameters. The analysis is conducted at two levels. The first level of analysis uses the content analysis technique to evaluate training and peacetime construction tasking policies at the policy source level. The second analysis examines the congruency of policies at the working level. The general conclusion is that current training and construction tasking policies are consistent with the war mission. The major deficiency noted is the lack of specific policy requiring that NCF units exercise routinely with supported commands. A second finding is that policy relative to cross-rate training appears to be self-contradicting.

Approved for public release; distribution unlimited.

Naval Construction Force Readiness Training, Peacetime Construction and the War Mission: A Question of Congruency

by

William A. Dos Santos
Lieutenant, Civil Engineer Corps, United States Navy
B.S., Cornell University, 1976

Submitted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
September 1983

Author: _____

Approved by: _____
Thesis Advisor

_____
Second Reader

_____
Chairman, Department of Administrative Sciences

_____
Dean of Information and Policy Sciences

ABSTRACT

In the study, the author examines the congruency between Naval Construction Force (NCF) peacetime training and construction tasking policies and the war mission. Following an introduction of NCF organizational relationships and organizational components, the author provides a brief history of the NCF. The NCF mission is identified by examining several key documents while training and construction tasking policies are abstracted from COMCBPAC/ COMCBLANT/ COMRNCF Instruction 1500.20E and OPNAV Instruction 5450.46G, respectively. The mission is redefined by the author in terms of "critical mission parameters" or constraints. The analysis then examines the degree of support contained in the policy documents for contraposing policies to the critical constraints. The analysis is conducted at two levls. The first level of analysis uses the content analysis technique to evaluate training and peacetime construction tasking policies at the policy source level. The second analysis examines the congruency of policies at the working level. The general conclusion is that current training and construction tasking policies are consistent with the war mission. The major deficiency noted is the lack of specific policy requiring that NCF units exercise routinely with supported commands. A second finding is that policy relative to cross-rate training appears to be self-contradicting.

TABLE OF CONTENTS

I. INTRODUCTION 8
A. A QUESTION OF CONGRUENCY 8
B. THE EVALUATION PROCESS 10
C. CONCLUSION/RECOMMENDATIONS 11

II. BACKGROUND 13
A. NCF ORGANIZATIONAL RELATIONSHIPS 13
B. NCF ORGANIZATIONAL COMPONENTS 16
1. Commander, Naval Construction Battalions 16
2. Naval Construction Brigade 17
3. Naval Construction Regiment 17
4. Naval Mobile Construction Battalion . . . 18
5. Naval Construction Force Support Unit . . 18
6. Amphibious Construction Battalion 19
7. Construction Battalion Maintenance Unit 19
8. Construction Battalion Unit 19
9. Seabee Team 20
10. Underwater Construction Team 20
C. ORGANIZATIONS SUPPORTING THE NCF 20
1. Commander, Naval Facilities Engineering Command 21
2. Civil Engineering Support Office 21
3. Naval Civil Engineering Laboratory 22
D. NAVAL MOBILE CONSTRUCTION BATTALION 22
E. OCCUPATIONAL FIELD 13 RATINGS 24
1. Builder 25
2. Construction Electrician 26
3. Construction Mechanic 26
4. Engineering Aid 26

5. Equipment Operator 27
6. Steelworker 27
7. Utilitiesman 27
F. HISTORICAL SUMMARY 28

III. THE NCF WAR MISSION AND PEACETIME POLICIES 32
A. THE FORMULATION PROCESS 32
1. Planning, Programming, and Budgeting System 34
2. Navy Program Planning 36
3. Summary 37
B. NCF MISSION AREAS 37
1. War Damage Repair 39
2. Marine Amphibious Force Support 40
3. The Advanced Base Mission 42
C. CURRENT POLICIES 44
1. Formal Training 45
2. Peacetime Construction 51

IV. ANALYSIS 53
A. EVALUATION DEFINED 54
1. The Measurement Definition 54
2. The Congruence Defintion 54
3. The Judgement Definition 55
B. EVALUATING CONGRUENCY AT THE SOURCE LEVEL . . 56
1. Content Analysis 56
2. The Process 58
3. Results 65
C. EVALUATING CONGRUENCY AT THE WORKING LEVEL . . 68
1. Analysis of Training Policy 68
2. Analysis of Construction Tasking Policy 73

V. CONCLUSION AND RECOMMENDATIONS 79
A. THE ANALYSIS PROCESS 79

B. CONCLUSION 80
C. RECOMMENDATIONS 81
D. RECOMMENDED FURTHER STUDIES 82

LIST OF REFERENCES 84

APPENDIX A: BRIEF HISTORY OF THE NAVAL CONSTRUCTION FORCE 86

APPENDIX B: PLANNING, PROGRAMMING AND BUDGETING SYSTEM (PPBS) 92

APPENDIX C: NMCB SKILL TRAINING REQUIREMENTS 99

APPENDIX D: ACTUAL NMCB HOMEPORT TRAINING SCHEDULE . . 104

APPENDIX E: NAVFAC ANALYSIS OF 2-1/2 YEAR EMPLOYMENT PLAN 105

INITIAL DISTRIBUTION LIST 122

I. INTRODUCTION

Military men have long appreciated the importance of identifying their unit mission in the context of a specific operation. In anticipation of future occurences military planners oftentimes prepare detailed statements of the course of action to be followed to accomplish a prescribed objective; these are referred to as Operation Plans (OPLANs). While the OPLAN is generally prepared for a specific situation, organizational mission statements are quite common to military units. But the mere statement of the organization's mission at the headquarters level is not sufficient to ensure that organizational resources will be appropriately employed at the operational level in pursuit of the corporate purpose. Ideally, policies which flow from the mission are established to provide the mechanisms for directing the organization in pursuit of the mission [Ref. 1]. This thesis seeks to examine the organizational policies of the Naval Construction Force (NCF) in the areas of training and peacetime construction tasking and to evaluate their congruency with the war mission.

A. A QUESTION OF CONGRUENCY

NCF is a term applicable to a group of naval organizational components which possess the common capability to construct, maintain and operate shore, inshore or deep ocean facilities in support of United States Navy and Marine Corps or other agencies of the United States Government [Ref. 2]. Commanded by officers of the Navy Civil Engineer Corps, NCF

units are manned primarily by enlisted personnel of the Occupational Field 13 ratings.

As an integral part of the defense establishment, the NCF has an organizational mission of ensuring its preparedness to respond to and, if necessary, to contribute to successfully fighting a war. One important measure of how effectively the NCF is pursuing this organizational mandate is reflected in the current training and peace time construction tasking policies.

Since the withdrawal of U. S. forces from Vietnam in the early 1970's, formal training and deployment construction have been the primary means by which personnel skill readiness has been maintained. Formal training (i.e., A School, C School, Special Construction Battalion Training (SCBT), and Factory Training) is the primary battalion mission during homeport periods and does not differ markedly from similar type training which is provided to other Navy rates [Ref. 2]. Peacetime construction during battalion deployments is intended to provide on-the-job training but also provides a tangible benefit in actual construction which renders it unique to a military organization. This "free" construction is an attractive NCF selling point which quite often heavily influences the type and level of training which battalions engage in during homeport prior to deployment. [Ref. 2]

NCF formal training for FY 82, excluding instructor salaries and facility expenses, cost approximately $1.4 million.* The average cost of transporting a single Naval Mobile Construction Battalion (NMCB) to and from an overseas deployment site is roughly $2.0 million.** Given the magnitude of the organizational resources committed to

---

*This estimate is based on FY83 figures provided to the author by the CO, NCTC Gulfport and 20th NCR Code R-20.
**This estimate is based on Fy83 figures provided by COMCBLANT.

training and deployment construction, a relevant question to ask is:

" To what extent are the current NCF training and peacetime construction tasking policies congruent with the war mission?"

B. THE EVALUATION PROCESS

In attempting to answer this question the author had to first identify the wartime mission of the NCF. This was accomplished by reviewing relevent documents and related literature and formulating a consensus as to the perceived NCF mission. The primary source documents for identifying the NCF war mission were the Seabee Construction and Technology (SCAT), System Definition Paper [Ref. 3] and Chief of Naval operations Instruction (OPNAV) 3501.115; Projected Operational Environment (POE) and Required Operational Capabilities (ROC) Statements for the Naval Construction Force (NCF) [Ref. 4]. After the mission was identified in broad terms, it was redefined by the author in a more workable form for purposes of comparison. The redefinition expresses the NCF mission in terms of six "critical mission parameters" which the author deduced from the above documents and a review of historical trends. They are:

1. The great volume of construction and repair work required in the early days of a contingency will result in critical manpower shortages.
2. The types of work anticipated are highly diverse.
3. Severe time constraints are imposed on the majority of work assignments.
4. A very high degree of coordination and integration will be required with supported commands, among NCF units and internally.

5. Disaster recovery in a nuclear, biological and chemical (NBC) environment imposes special constraints in addition to the above.
6. NCF units must be prepared to fulfill their military defense role on call.

Current NCF training and peacetime construction tasking policies are drawn from Commander, Naval Construction Battalions Pacific/ Commander, Naval Construction Battalions Atlantic/ Commander, Naval Reserve Construction Force Instruction (CCBINST) 1500.20E [Ref. 5] and Cheif of Naval Operations Instruction (OPNAVINST) 5450.46G [Ref. 6], respectively.

The evaluation was conducted at two levels. First, The content analysis technique was used to assess the congruency between training and peacetime construction tasking policies and the war mission at the policy source level. In the second analysis the congruency relationship was examined at the working or implementation level.

C. CONCLUSION/RECOMMENDATIONS

The general conclusion is that current training and peactime construction tasking policies are largely congruent with the NCF war mission. Notable exceptions include a lack of specific requirements to train regularly with supported commands in contingency scenario exercises, a lack of specific emphasis for exercising organizational command, control and communications (CCC), inadequate provision for training and exercising the damage assessment function and an inconsistent policy relative to cross-rate training.

The major recommendation derived from the study is that NCF policies should encourage NCF units to participate routinely in readiness related exercises. Such exercises

would provide the necessary vehicle for addressing the need for CCC training at all organizational levels, drilling the unit damage assessment function, and training in advanced base and contingency construction. A second recommendation is to encourage further cross-rate training.

II. BACKGROUND

This chapter is intended to introduce various aspects of the NCF. Following a brief discussion on how the NCF fits into the Naval and Department of Defense organizational structure, components of the NCF and units which support the NCF are introduced and discussed. This discussion is followed by an introduction of the Occupational Field 13 or construction ratings. The chapter closes with a brief history of the NCF which discusses manning and mobilization trends, and highlights the general types of construction which have been performed by the NCF in the past.

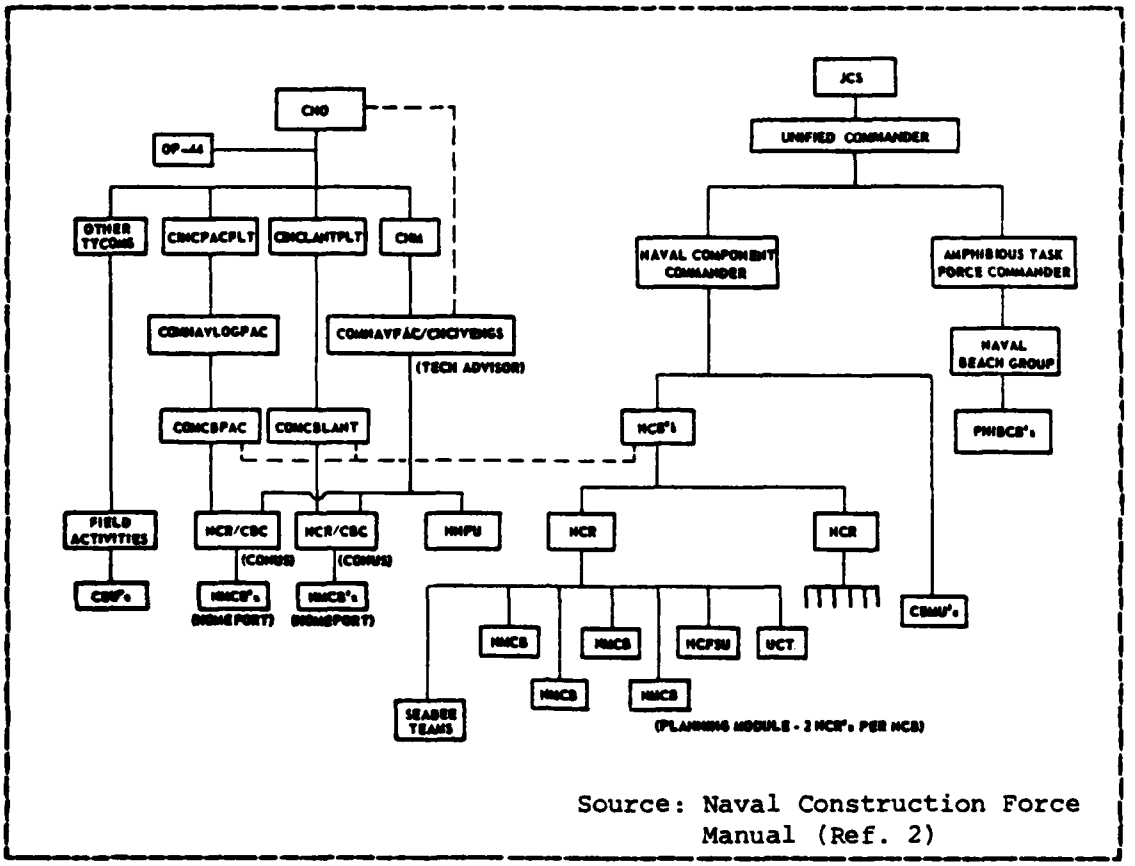
Unless cited otherwise, the discussion contained in the remainder of this chapter is drawn from the Naval Construction Force Manual [Ref. 2].

A. NCF ORGANIZATIONAL RELATIONSHIPS

While the majority of NCF units are in the Fleet administrative chain of command, a few are under the control of shore activities. Operational control of NCF units may be exercised by commands other than those which have administrative control such as unified commands or their component commanders.* Figure 2.1 depicts how NCF units fit into the defense organization in wartime while figure 2.2 shows the NCF peacetime organizational structure. The acronyms in the

---

*Operational control refers to the assignment of tasks, the designation of objectives and the specific direction necessary to accomplish the mission. Administrative control refers to personnel management, supply, services, and other matters not included in the operational mission.

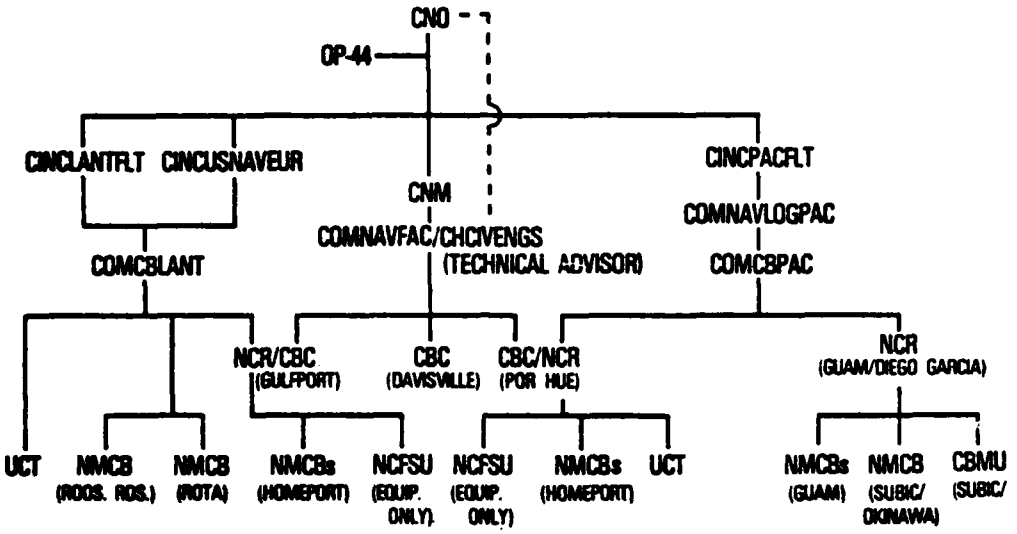


Source: Naval Construction Force Manual (Ref. 2)

Figure 2.1 NCF Organization (Wartime).

figures are defined below. In the wartime structure NCF organizations are under JCS operational control for all deployed units. Administrative support and direct command and control of NCF units in homeport remain under the Navy. The total numbers of Naval Construction Brigades and Naval Construction Regiments depends on the nature of the contingency. This point is clarified later with a description of the units and their organizational roles.

The NCF peacetime structure is not definitive. Rather, it is configured for efficient peacetime operations. Under the operational and administrative control of the Cheif of Naval Operations (CNO), organizational structuring and



Source: adopted from Naval Construction Force Manual (Ref. 2)

Figure 2.2 NCF Organization (Peacetime).

relationships are intended to facilitate peacetime readiness and training operations. CNO commisions NCF units, assigns them to their respective fleets and approves their deployment. The CNO also defines the general mission, approves allowance lists and the establishment of NCF detachments.

The Commanders-in-Chief (CINCs) of the Atlantic and Pacific Fleets are charged by CNO with ensuring that routine deployment schedules and assigned projects are in consonance with CNO policies. The CINC's exercise both operational and administrative control over the assigned units of the NCF. Although the operational chain of command may

change occasionally with the relocation of a unit, the administrative chain generally remains static.

Under the Fleet CINCs are various type commands who control all the ships or units of a certain type. The Naval Mobile Construction Battalions (NMCB) are part of the logistics support structure and therefore are subordinate to the Service Force Commanders. Because of the uniqueness of NMCB's as compared to other auxiliary units, the Service Force Commanders have delegated virtually all of the type command functions to Commanders Naval Construction Battalions Pacific and Atlantic.

B. NCF ORGANIZATIONAL COMPONENTS

The NCF is comprised of various component organizations with varying operational and administrative roles. While many NCF units are part of the active Naval Force, others are contained in the Reserve Naval Construction Force. Still others exist as echelons of military command and are primarily planning organizations. Such units exist on paper in the form of detailed, up-to-date listings of the men, equipment, and supplies needed to activate the units in time of contingency. Current NCF unit types and their various functions are described briefly in the following paragraphs.

1. Commander, Naval Construction Battalions

Commander, Naval Construction Battalions Pacific/Atlantic (COMCBPAC/COMCBLANT) have been established to exercise administrative control over assigned NMCB's and operational control when the battalions are in homeport. These commanders provide policy guidance in areas of

leadership, discipline, administration, contingency planning and readiness; military and technical training; unit employment, deployment, and scheduling; operational effectiveness; development of operational doctrine and tasking tactics and procedures; equipment management; and logistics support. Much of this responsibility is exercised through the homeport Naval Construction Regiment (NCR).

2. Naval Construction Brigade

The Naval Construction Brigade (NCB) provides coordination between two or more NCRs in a specific geographic area or in support of a specific military operation. An NCB provides administrative and operational control to include; review of plans, programs and collective construction capabilities, assigns priorities and deadlines; and directs distribution of units or materials and equipment. No NCB exists in the active NCF however, a brigade organization is maintained in the reserve forces.

3. Naval Construction Regiment

Naval Construction Regiment (NCR) provides command, administrative and operational control of two or more battalions operating in a specific area or operating in support of a specific operation. In a mobilization or contingency, the NCR provides planning, estimating and engineering capability beyond those contained in the battalions. This type of regiment is refered to as an operational regiment. A second type, is called a homeport regiment. The homeport NCR is located at a Construction Battalion Center to provide continuity of direction and coordination of non-operational functions such as training, outfitting, and

receiving and separating personnel for deployed units. Homeport regiments may also provide a materials management function in supporting deployed battalions. Current homeport regiments possess a planning, estimating and engineering capability which allows them to initiate or review project planning.

4. Naval Mobile Construction Battalion

As the primary operational unit of the NCF, the NMCB is designed for construction, repair and operation of facilities and line of communications, and military support operations. There are currently eight active and 17 reserve NMCB's; making these the largest recipients of NCF personnel. For this reason, this paper addresses itself primarily to the NMCB's in matters of policy, training and construction tasking. A more detailed discussion of the NMCB is provided below following comments on other NCF related units.

5. Naval Construction Force Support Unit

The Naval Construction Force Support Unit (NCFSU) provides logistical support for an NCR and other supported units. This includes performing inventory management of construction materials; maintaining inventory control; operating, maintaining and repairing NCF auxiliary equipment; operating and maintaining plants such as asphalt and concrete batch plants, large paving machines, longhaul transportation, and like equipment. There are no manned NCFSUs in either the active or reserve forces but, NCFSU equipment is maintained in both the active and reserve NCF.

6. Amphibious Construction Battalion

An Amphibious Construction Battalion (PHIBCB) provides engineering support to a Naval Beach Group during the initial assault and landing phase of an amphibious operation. PHIBCB support includes assembling and installing pontoon causeways; installing and operating ship-to-shore fuel systems; barge operations for lighterage and transfer operations; and warping tugs in conjunction with causeway, fuel system and salvage work.

7. Construction Battalion Maintenance Unit

A Construction Battalion Maintenance Unit (CBMU) operates and maintains public works and public utilities at overseas and forward area bases after construction has been completed. One CBMU is currently maintained in the active forces.

8. Construction Battalion Unit

The Construction Battalion Unit (CBU) provides engineering support of a nature that does not lend itself to efficient economical accomplishment by any other type NCF component. A CBU may be formed to fulfill a specific requirement at a specific location. Personnel and equipment composition will be tailored to the need. In peacetime CBU's are established throughout various stateside Naval Stations to provide a nucleus of self-help engineering expertise for station quality of life projects.

9. Seabee Team

A Seabee Team is typically comprised of 13 highly trained individuals. They are established to provide a construction and construction training capability to support civic action and rural development usually in underdeveloped areas of the world. Teams may also use their talents in support of counterinsurgency operations.

10. Underwater Construction Team

The Underwater Construction Team (UCT) provides underwater engineering, construction, and repair capability to meet the requirements of the Navy, Marine Corps and others both in contingency and national security operations. These teams are capable of accomplishing complex in-shore and deep ocean underwater construction tasks either as independent units or as augment to NCF or other military organizations.

C. ORGANIZATIONS SUPPORTING THE NCF

The NCF draws upon many elements of the department of defense for support. For example, the Air Force Military Airlift Command (MAC) transports NCF personnel, the Army procures NCF automotive transportation, while the Marine Corps provides military training support. Within the Navy, support is provided by both the operating forces and the shore establishment. Funds for operations and maintenance are provided through the fleet administrative chain of command. Naval Sea Systems Command (NAVSEA) provides weapons. Naval Supply Systems Command (NAVSUP) provides supplies, materials and material handling equipment. Chief

of Naval Education and Training (CNET) provides formal technical training thrcugh the Naval Construction Training Centers (NCTC) and the Naval School, Civil Engineer Corps Officers (CECOS). The Naval Facilities Engineering Command provides unique support via its various organizational components.

1. Commander, Naval Facilities Engineering Command

Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM) or NAVFAC is the Chief of Civil Engineers. He functions as technical advisor to the CNO on all matters relating to the Naval Construction Force, the Civil Engineer Corps and Occupational Field 13 personnel. NAVFAC is responsible for the initial outfitting and coordinatingmaterial support for the NCF. NAVFAC also advises the Naval Military Personnel Command (NMPC) on staffing and training requirements. In this capacity, NAVFAC heavily influences NCF policies and doctrine. NAVFAC field activities likewise provide a considerable amount of support to and influence on the NCF.

2. Civil Engineering Support Office

The Civil Engineering Support Office (CESO) provides services directly related to the NCF in areas of planning and analysis, program management and material management. These include: planning and analysis of overalll support for the NCF system, assistance in determining personnel and training requirements, preparing budgets for NCF equipment and tactical materials, assisting in determining equipment allowance, maintenance and overhaul requirements, and monitoring the effectiveness of NCF supply support organizations.

3. Naval Civil Engineering Laboratory

The Civil Engineering Laboratory provides reaseach, development, testing and evaluation (RDT&E) support for methods, materials, and equipment used by the NCF for contingency construction in support of Naval and Marine Corps operating units.

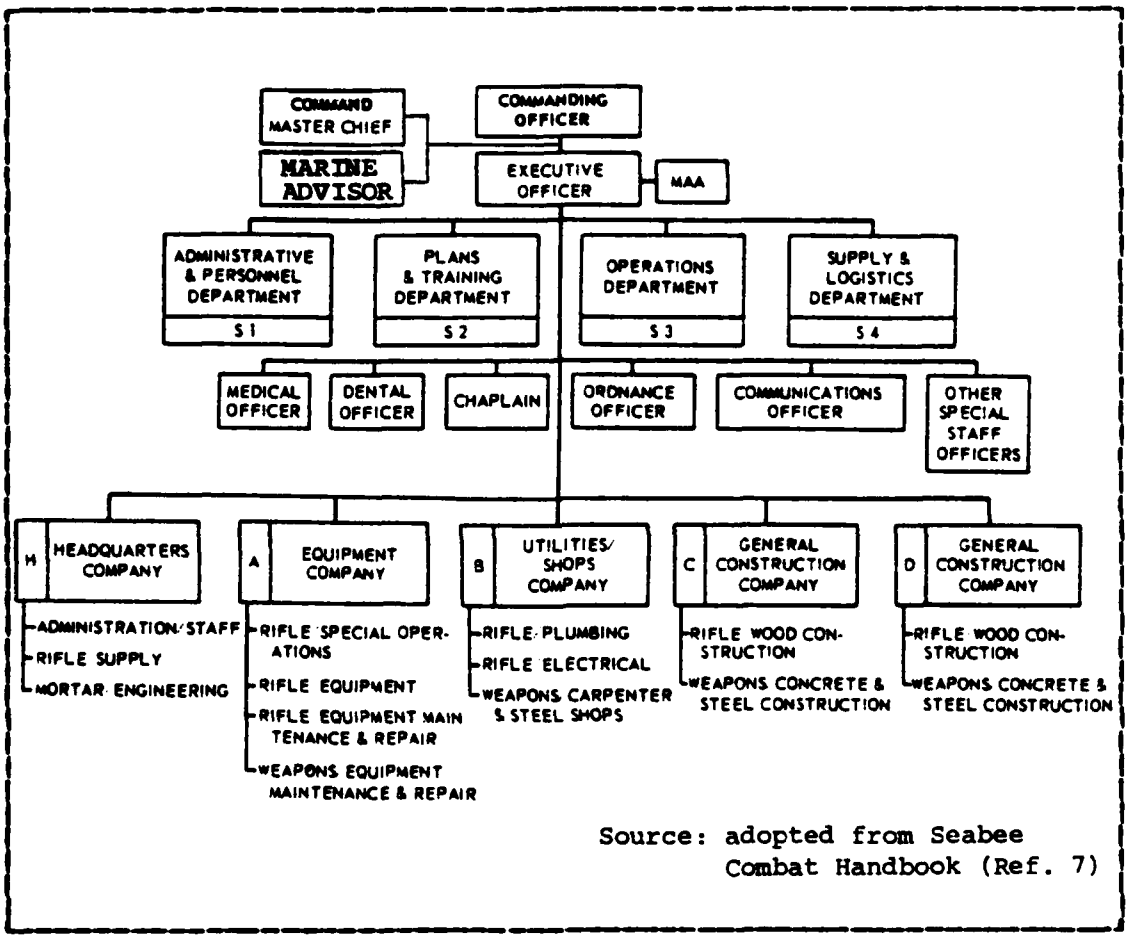
D. NAVAL MOBILE CONSTRUCTION BATTALION

As the backbone of the NCF, the NMCB is structured for the dual role of construction and military support operations. The NMCB's mission is to build advanced base facilities in support of U. S. and allied military activities, as well as tc provide engineering support for Fleet Marine Units. Additional support requirements include the repair and operation of facilities and lines of communications (LOC) during emergencies and contingency operations. [Ref. 7]

The fully outfitted NMCB is a large self-sufficient unit which requires only that all classes of consumables be provided to it. As a self-sustaining unit, the NMCB is capable of limited self defense; performing internal communications, messing and billeting; and providing the necessary administrative, personnel, medical, dental, supply, and chaplain functions. It accomplishes all of this in support of its primary function of construction which includes: concrete, block and masonry work, asphalt work, structural steel fabrication and erection, pipeline installation, well drilling, water purification, sewage disposal, electrical power distribution and lighting installation, carpentry, hauling, and survey and testing operations. In addition, the NMCB also has the capability

to conduct disaster recovery operations during natural disasters and those caused by Chemical, Biological and Radiological or conventional attack. [Ref. 7]

The NMCB organizational structure is tailored for adaptability. Every battalion sub-division has a construction and military support assignment. Figure 2.3 shows the



Source: adopted from Seabee Combat Handbook (Ref. 7)

Figure 2.3 The Basic NMCB Organization.

battalion dual role structure. the NMCB is organized into one headquarters (support) company and four construction/ rifle companies. All platoons are organized into work squads which correspond to the weapons rifle squad

organization. Work crews and work squads of construction platoons are also trained as disaster control teams. Command channels are the same for both construction and military support, permitting rapid transition from one situation to another. This highly flexible structure enables the NMCB to meet its many and varying mission roles. [Ref. 7]

The current battalion manpower allowance in peacetime is 21 officers and 563 enlisted men. Of these, 16 are Civil Engineer Corps officers while 470 are Occupational Field 13 rated personnel. The wartime allowance totals 762. [Ref. 2] During the height of the Vietnam era, battalion strengths reached over 1000 men [Ref. 8]. Current manning levels are about 700 for all battalions.

E. OCCUPATIONAL FIELD 13 RATINGS

Navy ratings provide the primary means of identifying billet requirements and personnel qualifications. Ratings are broad enlisted career fields which encompass similar duties and functions and provide a path of advancement for career development. Presently, there are 24 occupational fields consisting of 70 ratings and six apprenticeships (i.e.,AN, CN, DN, FN, HN, SN) within the Navy. The ratings are distinguished by distinctive rating badges.

The Occupational Field 13 or construction ratings comprise the seven generalized Seabee skill areas. The Seabee ratings are: Builder (BU), Construction Electrician (CE), Construction Mechanic (CM), Engineering Aid (EA), Equipment Operator (EO), Steelworker (SW), and Utilitiesman (UT). The abbreviations, titles and symbols for these ratings are shown in figure 2.4. The construction ratings are discussed below.

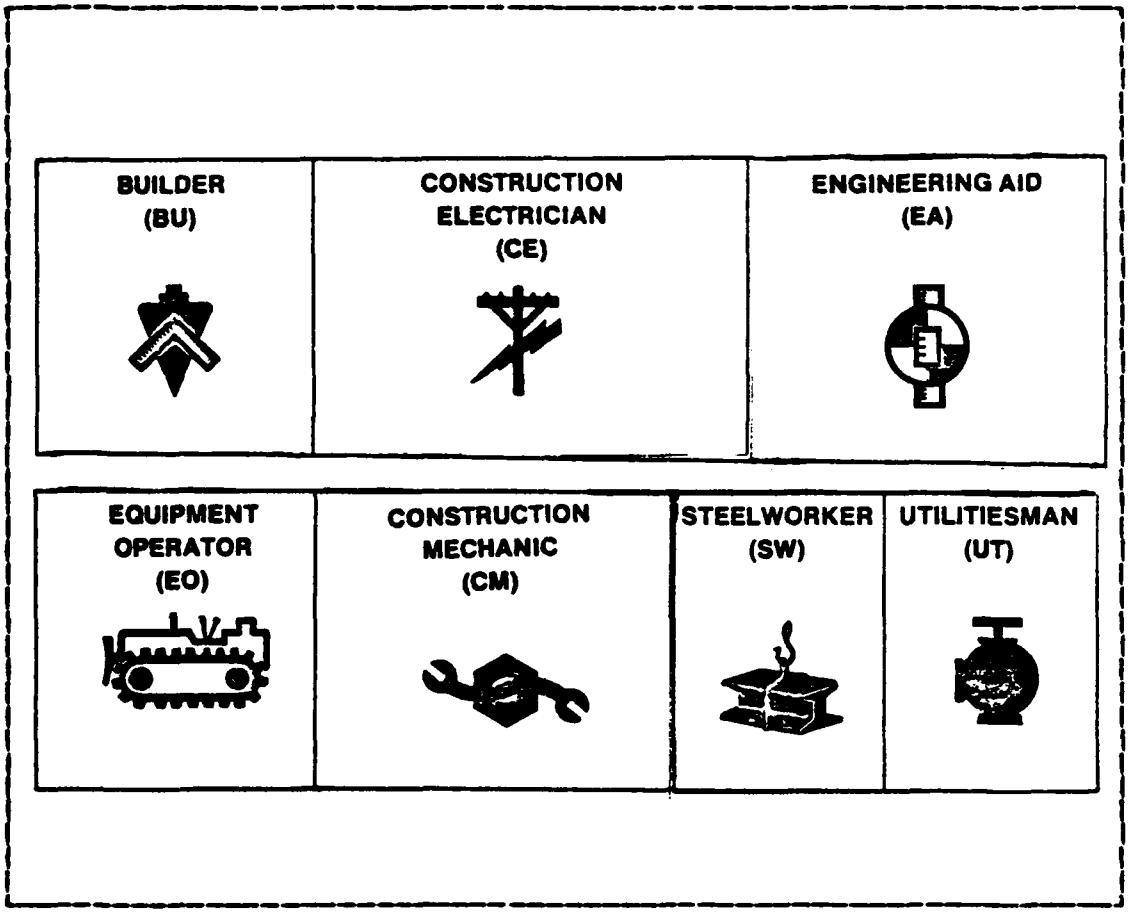


Figure 2.4 Occupational Field 13 Rating Identification.

1. Builder

Builders perform tasks required for construction, maintenance and repair of wood, concrete and masonry structures. They plan, initiate materials procurement, and form and direct crews tc perform rough and finish carpentry; erect and repair waterfront structures; wooden and concrete bridges and trestles; fabricate and erect forms; mix, place and finish concrete; lay or set masonry; and paint and preserve surfaces.

2. Construction Electrician

The Construction Electrician plans, supervises, and performs tasks required to install, operate, service, and overhaul electric generating and distribution systems, install and repair interior, overhead, and underground wires and cables, and attach and service units such as transformers, switchboards, motors, and controllers.

3. Construction Mechanic

Construction Mechanics perform tasks involved in maintenance, repair and overhaul of automotive, materials handling, and construction equipment; assign and supervise the activities of other mechanics who locate, analyze, and correct malfunctions in equipment; and issue repair parts, maintain records and prepare related reports.

4. Engineering Aid

Engineering Aids are involved in a multitude of planning and test related functions. They plan and perform tasks required in construction surveying, drafting, planning and estimating, and quality control; prepare progress reports, time records, construction schedules, and material and labor estimates; establish and operate a basic quality control system for testing soils, concrete, asphalt and other construction materails. They also prepare, edit, and reproduce construction drawings; and make and control surveys.

5. Equipment Operator

Tasks involving deployment and operation of automotive, materials handling, weight-lifting and construction equipment are part of the Equipment Operator rating skills. EOs direct and coordinate crews in earthmoving, road-building, quarrying, asphalt batching and paving, and concrete transit mixer operations. They also maintain records and publish reports on mobile and stationary equipment, and organize and supervise automotive and construction equipment pools.

6. Steelworker

Steelworker tasks relate to fabrication of metallic members, assembly and erection of pre-engineered metal structures and fabrication and installation of steel reinforcement for concrete structures.

7. Utilitiesman

Utilitiesmen plan, supervise and perform tasks involved in installation, maintenance and repair of plumbing, heating, steam, compressed air, fuel storage and distribution systems, air-conditioning and refrigeration equipment and sewage collection and disposal facilities.

In addition to the specialized rate related skills listed above, all Occupational Field 13 personnel must maintain individual combat readiness skills and perform tasks required in combat and disaster preparedness or recovery operations.

F. HISTORICAL SUMMARY

Since the First World War, American military conflicts have for the most part taken place in distant, foreign locations. In such circumstances the need for a viable engineering support effort becomes readily evident. The Naval Construction Force has evolved through a deliberate process in response to this need. The discussion that follows is drawn primarily from The Naval Construction Force Manual P-315, [Ref. 2].

The seeds for the ultimate establishment of naval craftsmen were planted during World War I with the "unoffical" establishment of the Twelfth Regiment (Public Works). Soon after its establishment, the Regiment began to dispatch specialized units throughout the U. S. and Europe. As its numbers increased both in total manpower and number of battalions, so did the diversity of construction tasking. After peaking at nearly 6,300, the Twelfth Regiment ceased to function during the post war standdown and faded away by the end of 1918.

The need for naval construction forces arose once again with the advent of World War II. The impracticality of using civilian contractors in the war zone became apparent as conflict erupted throughout the Pacific. The NCF was established in order to accomodate the growing requirements of the Fleet. As numbers increased and battalions grew in size--to upwards of 1,100-- it was soon realized that a greater degree of specialization and tailoring of units to improve operational efficiency was needed. Specialized detachments ranging in size from 6 to 600 men were formed to meet specific needs. By the close of the Second World War 350,000 men had served in the NCF and had performed a wide range of construction and construction related tasks.

During the general demobilization which took place following the war NCF manning was once again reduced.

At the start of the Korean conflict NCF strength stood at roughly 2,800. But rapid mobilization was made possible owing to the maintenance of a NCF Reserve. Again Seabees distinguished themselves as highly adaptable and capable craftsmen constructing advanced airfields, supporting major amphibious landings and maintaining critical facilities. The general demobilization that took place following the two World Wars did not take place following Korea. It was at this time that the Seabees began engaging in sizable peacetime projects.

NCF peacetime accomplishments between Korea and the Vietnam conflict include the construction of the Marine Corps Air Facility on Okinawa; assembly of floating drydocks for Nuclear submarines at Holy Lock, Scotland; installation of the First Nuclear Reactor Power Plant at McMurdo Station, Antartica and the construction of Cubi Point Air Station in the Philippines.

With the onset of Vietnam, NCF strength once again began to grow. At the height of the conflict Seabees numbered 29,000 and manned 21 battalions. NCF accomplishments in Vietnam were no less impressive than those of World War II or Korea. Examples of Seabee accomplishments include: supporting the Marines at Chu Lai, reopening the railroad between Hue and Da Nang, constructing a new Naval base on a sand pad floating on paddy mud, paving access roads, and building warehouses, aircraft support facilities and bridges. [Ref. 8] Although the construction effort in Vietnam involved Military Engineers from all of the Services, Most of the building was done by an American building consortium. The consortium of Raymond, Morrison - Knudsen, Brown and Root, and J.A. Jones (RMK-BRJ) comprised the largest pool of construction firms in American history.

Operating with a force composed predominately of Vietnamese workers, RMK-BRJ played the major role in constructing six major ports with twenty nine berths, six naval bases, eight permanent jet airfields, hospitals with 6,200 beds, 14 million square feet of covered storage and 1,600 miles of paved roads. [Ref. 8]

As deescalation begin at the close of Vietnam, NCF forces were again reduced. Their attention now turned to peacetime deployment tasking. The largest of such peacetime endeavors following Vietnam was the development of the Naval Communications Station with supporting activities, on the Indian Ocean Island of Diego Garcia. With the recent reduction of direct NCF involvement on Diego Garcia, Seabees are turning their attention to numerous and varied peacetime tasks throughout the world. The current primary Seabee deployments include: Guam, Marianas Islands; Okinawa, Japan; Subic Bay, Phillipines; Roosevelt Roads, Puerto Rico; Rota, Spain; and Sigonella, Sicily.

As one reviews recent NCF events, several occurances standout. The first of these is the ups and downs of manning levels, increasing in times of conflict and decreasing during the periods which follow the end of hostilities. Secondly, subsequent to the Korean conflict, NCF strength was not reduced to the extent that it had been following previous periods of conflict. The NCF Reserve has remained intact following Korea. A third observation is that during wartime battalions tend to grow in size as well as in numbers. The large battalions then tend to deploy specialized detachments which vary in numbers and composition to accomplish specific jobs with greater efficiency. Fourth, the types of construction and repair work which NMCBs engage in is highly diverse, varying from very simple maintenance and repair to the development, construction and operation of relatively sophisticated support systems. A

fifth observation is that time constraints associated with contingency or wartime projects are almost always severe. Sixth, in hostile regions NCF personnel have had to assume their military defense role on a regular basis. Finally, Vietnam has demonstrated that civilian construction contractors can be used effectively to augment military engineering forces.

Appendix A provides a more detailed history of the NCF and the Seabees. Individuals desiring to pursue the historical aspect of the NCF as they relate to the Vietnam conflict, are refered to the work of Tregaskis [Ref. 8].

III. THE NCF WAR MISSION AND PEACETIME POLICIES

Identifying the mission of the NCF can be approached in at least three ways. One possible way is to reflect on what the NCF has done in the past, and to extrapolate these accomplishments into the future. A second approach is to review current OPLAN requirements and to accept these as the mission. As a third approach, one can develop futuristic war scenarios and infer the NCF mission from these. The approach taken in this study uses a combination of all three.

Prior to broaching the issues of more clearly defining the mission of the NCF and the current policies which support that mission, it is constructive to examine the method or methods by which the organizational objectives which collectively constitute "The Mission" are formulated. The following section is intended to provide a basic understanding of the objectives and policies formulation process. In subsequent sections the NCF war mission is identified and current policies outlined.

A. THE FORMULATION PROCESS

In defining strategic planning, Anthony (1965) wrote:

> Strategic planning is the process of deciding on objectives of the organization, on changes in these objectives, on the resources used to attain these objectives and on policies that are to govern the acquisition, use, and disposition of these resources.
>
> [Ref. 9:p.16]

"Objectives" then, (or the mission) are the aims of the organization while "policies" are guidelines which orient the organization in pursuit of objectives [Ref. 9].

The initial dilemma which one faces in examining the process by which objectives are formulated, is deciding at what level in the organization and at what point in time to start.* For purposes of this paper the Naval Construction Force is treated as a suborganization in the larger organization called the Federal Governmant of the United States of America.

Choosing the organizational frame of reference at the national level, the organizational values or objectives which are in theory, an expression of national values as determined and modified by publicly elected officials are examined. These values which are rooted in the Constitutuion of the United States (the starting point) were a product of human experience and not of abstract reason. They have withstood the test of time, remaining substantially in tact even to this date. [Ref. 11]

Since the initial codification of the national values in the Constitution, the process of subsequent goal formulation and policy decision making at the national level and within the Department of Defense has been, as Lindblom (1959) calls it, "a science of muddling through." Lindblom argues that when confronted with complex problems, organizations address the issues of objective formulation and policy development jointly. He states that the organization will forego the general formulation of objectives and focus its attention on marginal values in an incremental fashion.** [Ref. 12] Lindblom's assertion is indeed supported by recent

---

*Following the counsel of March and Simon (1958) [Ref. 10], no attempt will be made here to define "the organization." Instead, the discussion will refer to organizations by name without attempting to place definitive boundaries on them.

**Lindblom's argument is that a rational - comprehensive

historical trends as reflected in the national budget formulation. The national budget rarely experiences greater than a 10 per cent change in agency appropriations and is highly predictable [Ref. 13]. The process by which this incrementalism has taken place within the DOD, over the last two decades, is formalized under the DOD Planning, Programming, and Budgeting System (PPBS).

1. Planning, Programming, and Budgeting System

The Defense PPBS was instituted in the mid-1960's as a means of tying together the military planning and budgeting functions. It is a cyclic process which contains five distinct but interrelated phases; planning, programming, budgeting, execution and accountability. The following discussion places emphasis on the planning and programming phases of the cycle since it is during these phases that objectives and policies materialize or are altered. The primary source for the PPBS and Navy Program Planning discussion which follow is the Naval Postgraduate School Practical Comptrollership Manual [Ref. 14]. Appendix B is an abstract from the Manual which provides a more detailed discussion of the PPBS and Navy Programming process.

The planning phase of the PPBS is initiated with an assessment of the threat to the security of the United States which is compiled by the Joint Cheifs of Staff (JCS). The threat scenario when combined with the national policy, culminates in the development of force objectives to assure the security of the United States. The Joint Strategic Planning Document (JSPD) provides the advice of the JCS to

---

(root) approach to dealing with organizational values or objectives is not possible because of; a) disagreements among organizational factions, and b) the administrator's inability to rank personal values when they are in conflict with one another.

the President, the National Security Council and the Secretary of Defense (SECDEF) on the military strategy and force structure required to meet the national security objectives. In the context of the PPBS annual cycle, planning ends and programming begins with SECDEF's issuance of the Defense Guidance.

The programming phase of the PPBS is intended to translate strategy into program force structures. Force objectives are "costed out" for financial and manpower resources five years into the future via systematic approval procedures. The Defense Guidance (DG) is based upon the JSPD (as amended by the President and the SECDEF) and provides guidelines to be observed by the JCS, the Services, and Defense Agencies when they are formulating the force structures and the Five Year Defense Programs (FYDP). The FYDP is the official summary of programs approved by the Secretary of Defense. It specifies force levels in terms of major mission programs and lists total obligational authority (TOA) by appropriation and manpower.

In response to the Defense Guidance, the Services prepare the Program Objectives Memorandum (POM). In the POM, Services delineate total progrm requirements in terms of force structure, manpower, material and costs, to satisfy all assigned functions and responsibilities during the period of the FYDP. The POM provides justification for changes to the approved FYDP base and is the primary means of requesting revision of SECDEF approved programs.

About a month after the Services promulgate their respective POM's, JCS gives their views on the adequacy of the composite force and resource levels proposed by the Services by issuance of the Joint Program Assessment Memorandum (JPAM). SECDEF considers the Joint Chiefs analysis when deciding program issues and then drafts the Program Decision Memorandum (PDM). The budget phase of the

PPBS commences in September with the submission of the Services budgets to SECDEF. The annual budget reflects the financial requirements needed to support the PDM approved programs.

2. Navy Program Planning

Within the Department of the Navy, a similar internal process takes place which anticipates events at the SECDEF level. The Navy Program Planning takes place during the months of July through January. The Secretary of the Navy issues Department of the Navy Planning and Programming Guidance (DNPPG) during this phase. In early November the Office of the Director, Navy Program Planning, Systems Analysis Division (OP-96) prepares the Net Assessment (of Naval capabilities) and the Preview CNO Program Analysis Memorandum (CPAM). CPAM's are presented through January in areas of Support and Logistics, Manpower, Personnel and Training, Fleet Support and Strategic Mobility and result in the eventual presentation of the Tentative Program Summary and Program Decision Summary. The CPAMs address the Navy's capability to carry out its overall goals and objectives and identify major issues requiring decision by the CNO Executive Board. Claimants submit issues of Navy-wide interest which address major resource allocation or policy issues to OP-96 preceding the CPAM phase.

The Program planning phase concludes with the Tentative Program Summary which aggregates program issues and alternatives for CNO decision and prioritization. CNO decisions are promulgated via the Initiative Program Decisions and compiled in the Program Decision Summary (PDS). During the program Data Base Update phase which follows, Resource Sponsors update the program data base to reflect the fiscal and manpower controls of the PDS. The

final phase of the POM development, the "End Game" is an iterative process involving trade-offs to accomodate necessary repricing of procurement programs and the establishment of appropriations controls to enhance balance and budget feasibility. The culmination of the Navy Program planning process is submission of the Programs Objectives Memorandum to SECDEF.

3. Summary

The Planning Programming and Budgeting System provides a systematic process by which;

1. The organization's objectives can be identified within the context of the strategy developed to counter the anticipated threat.
2. Requirements of the strategy can be established and programs developed to execute that strategy.
3. Resources to support the programs can be budgeted.

The NCF constitutes a minor element of the General Purpose Forces Program within the FYDP. In terms of the budget, NCF requirements are relatively small. When they are incorprated into the budgets of the several major claimants which provide the NCF its funds, they can be easily overlooked or disregarded. Yet, as the following section shows, the NCF plays a significant defense role in fulfilling its war mission in support of the Fleet.

B. NCF MISSION AREAS

The mission of NMCB's is to provide responsive military construction support to naval, Marine Corps and other forces in military operations, to construct base facilities, and to conduct defensive operations as required by the circumstances of the deployment situation. In time of emergency or disaster, NMCB's shall conduct disaster

control and recovery operations, including emergency public works operating functions, as directed.

[Ref. 6:p.1]

In delineating the wartime mission of the NCF the author proposes that no attempt be made at rediscussing or extending the formulation process previously discussed. Rather, the identification process involves a review of relevant documents and literature in an attempt to formulate a consensus as to the perceived NCF mission. The relevant documents in this regard include Chief of Naval Operations Instructions; the Joint Contingency Construction Requirements Study I and II, sponsored by the Joint Cheifs of Staff; major operations plans (OPLANS), and to a large extent, history. A recently conducted study has examined these documents and assembled a comprehensive statement of NCF mission requirements in a paper titled Seabee Construction and Technology (SCAT), System Definition Paper distributed in 1981 [Ref. 3].

The Seabee Costruction and Technology study arose from a 1976 Commandant of the Marine Corps proposal that a joint attempt be made tc define the functions and material requirements of the Fleet Marine Force and the Naval Construction Force in amphibious operations. CNO approved such a study in January 1977 designating the Office of the Deputy Chief of Naval Operations (Logistics), Shore Activities Planning and Programming Division (OP-44) as the CNO representative, Naval Facilities Engineering Command, Deputy Commander for Military Readiness (Seabees) NAVFAC-06 as the technical advisor and the Naval Civil Engineering Laboratory as the assisting laboratory. Later that year, attendees at the June 1977 Research Development Testing and Evaluation conference agreed that CESO and CEL should expand the research project to study the needs of the NCF system as

a whole for future RDT&E programs. The resulting product was a systems definition paper which breaks the NCF mission into three mission areas; war damage repair (WDR), Marine Amphibious Force (MAF) support in the amphibious objective area (AOA) and advanced base construction. [Ref. 3]

The NCF mission identified below is largely derived from the SCAT document and OPNAV Instruction 3501.115A; Projected Operational Environment (POE) and Required Operational Capabilities (ROC) Statements for Naval Construction Force (NCF) [Ref. 4].

1. War Damage Repair

War damage repair (WDR) has always been part of the NCF support mission [Ref. 3]. The importance of WDR to NATO requirements was emphasized in the Joint Contingency Construction Requirements Study and has recently been specifically included in the Civil Engineering Support Annex to major OPLANS. WDR involves making expedient temporary repairs to critical operational facilities which have been damaged in the early days of a contingency or actual war.

Time requirements associated with the WDR mission are highly dependent upon the extent of damage and thus are not quantifiable except in a specific situation after the actual damage has occured. It is anticipated however, that they would be so severe in most circumstances that exact quantification is not necessary. The general scenario envisions the war damage repair team deploying to the damage site as rapidly as possible and to have them working within hours of occurance of damage. [Ref. 3]

The war damage repair scenarios require rapid repair of airfields including; runways, taxiways, parking aprons, aircraft revetments, control towers, hangers, maintenance facilities and airfield lighting; petroleum, oil and

lubricant (POL) systems including; storage tanks, lines, transfer facilities, and storage berms; lines of communication (LOC) to include; main vehicular arteries, railroad beds, dams, spillway and other water catchment facilities, communications facilities, and pier and mooring repairs; and other critical facilities such as hospitals, combat vehicle maintenance facilities, weapons and ammunition facilities and storage revetments, power generation and distribution facilities, water storage and distribution facilities, navigation aids, other utilities, security facilities and general clearing of rock, earth and debris.

The specific requirements include conducting a damage assessment and unexploded ordnance survey, making a determination of method of repair and time to repair, prioritizing the repair efforts and administering the temporary "patch" repair. Finally, to satisfy the latter part of the dual construction-defense role, repair team members must be prepared to contribute to the base defense organization if the need arises.

The vast diversity of potential tasking and the severe time constraints under which WDR operations must be conducted, require that the work force be highly skilled in the repair techniques. Since the specific tasks and their priorities may change from day to day, the repair team requires a degree of flexibility and mutual support which can only be engendered in a group of cross-trained individuals.

2. Marine Amphibious Force Support

The Marine Amphibious Force (MAF) level amphibious operation involves placing ashore roughly 50,000 personnel and numerous weapons systems in a foreign and oftentimes underdeveloped environment. The current concept of

operation demands a responsive logistic pipeline to support a highly mobile combat organization. Sustained logistics operations require establishment of terminal facilities and an engineer force to construct or install, operate and maintain these facilities. Bridging the sea-land interface is a critical aspect of the logistics flow to combat units which are not discussed here since the focus of this study is directed at the NMCB mission vice that of the PHIBCB's.

The top priority requirements in an amphibious operation are to render beaches trafficable and to establish lines of communication and tactical air support. After the landing beach is cleared, establishment and support of Marine tactical aircraft ashore is the first priority. The current Marine Corps tactical air concept calls for the assembly of the Short Airfield Tactical Support (SATS). Subsequent NCF effort can then turn to the construction and maintenance of roads and bridges; helicopter landing pads and support facilities; upgrading and replacement of assault fuel systems; and construction of ammunition supply points, water supply facilities, cantonments, defensive structures, logistic airstrips, and other tactical support facilities.

The types of facilities and systems required include airfields, towways, ordnance and arming pads, aircraft revetments, aircraft boresight range, blast protection areas, aircraft washracks, fueling facilities, and aircraft protection and maintenance structures; POL storage points, revetments, lines and facilities; water catchment areas, storage tanks, and magazines for water and food; ammunition revetments, cargo staging areas, pavements and stabilized areas, open storage areas, drainage systems, drainage fields; sanitary landfills and other sanitation facilities; communications systems for defensive operations; utilities, retaining walls, dams, excavations for defensive positions, outdoor exercise areas and facilities; asphalt plants,

concrete batching facilities, and rock crusher facilities; and shelters for men, material, weapons and equipment; and structures to support the weapons systems.

In order to meet the heavy demands of the mobile MAF organization, the NCF must provide rapid construction; implying temporary facilities with some pre-engineered components and expedient ingredients. However, the high degree of sophistication of the weapons used by the MAF, along with the Marine Corps trend to containerization, requires construction of a commensurate degree of sophistication.

3. The Advanced Base Mission

The Advanced Base mission places no limit on the type of facility required. Rapid construction of semi-permanent and temporary facilities of all categories is envisioned. Facility requirements, other than those used in peacetime operations, must be provided in support of such missions as anti-submarine warfare, electronic surveillance, search and rescue operations, and logistics support in the forward area. In-country support bases require establishment of or augmentation to logistic terminal facilities, coastal, inshore, and riverine warfare operating bases; communication facilities; ashore fleet air units and other fleet support facilities in the immediate conflict area. The size and nature; its durability, mobility, relocatability, habitability and cost, of the facility must be tailored to the specific circumstance. The chosen facility will likely be of the expedient, semi-permanent or temporary type.

The types of facilities to be constructed include airfields and their pavements, berms and revetments for aircraft, ammunition and POL; cargo handling areas, open

storage areas, LOC and drainage systems, aircraft maintenance hangers, air operations structures, ammunition storage facilities, POL facilities, utilities and communications facilities, cold storage, covered storage, medical facilities, and troop housing and messing. The applicable construction functions include clearing, grubbing, earthmoving, grading, hauling, compacting, spreading, paving, quarrying, rock crusher operations, batch plant operations and other like functions; construction of pre-fabricated buildings, masonry and concrete buildings and steel, timber and concrete bridging; installation of utilities including central and individual power plants, sewage and water systems; well drilling and water operations; and installing communications systems.

Additional requirements will call for the joint efforts of NMCB's, PHIBCB's and UCT's. These include pier and wharf repair and construction; assembly, installation, operation and maintenance of fuel transfer systems; quaywall, breakwaters and other beach erosion control facilities; shore-positioned aids to navigation and other harbor facilities to support the operating forces.

Whether conducting expedient repairs to battle damaged facilities, supporting an amphibious operation or expanding or constructing new facilities for a protracted war, NCF units must possess several salient characteristics. Since there is a critical need for key operational facilities and systems from the onset of a contingency or actual war, time constraints for repairs and construction are always severe. Current OPLANS envision a need for substantially larger engineering forces then currently exist in the active and reserve NCF. The vast diversity of operational mission requirements, weapon system sophistication and projected operational environments spell a need for a

highly mobile, versatile and adaptable force which is capable of adjusting to the operational needs. Next the current training and peace time construction tasking policies which are aimed at preparing the NCF for the anticipated challenges are examined.

C. CURRENT POLICIES

Anthony's definition of strategic planning cited above, describes strategy as a comprehensive delineation of an organization's plan for acheiving its objectives or mission. Strategy serves to guide the decisions and actions of the organization by examining alternatives towards acheiving organizational objectives. Whereas strategy provides a blueprint for accomplishing the organizational purpose, policy serves to guide and control strategy implementation. Policy describes how internal organization processes will function and be administered. Policy is subordinate to and supportive of organizational objectives; serving to operationalize and institutionalize the chosen strategy by which these are to be accomplished. [Ref. 1]

The inseparability between organizational objectives and the operational policies which support the objectives is evident. While policies serve to institutionalize and simplify the day-to-day decision making process of operational managers, their relevance in supporting the organization's mission is of no less importance. Properly choosen policies can greatly improve organizational efficiency by providing methods, procedures, and practices at various levels within the organization. However, inappropriate policies can prove counterproductive and result in the organization squandering resources in pursuit of improper aims. [Ref. 1]

The following sections describe the current peacetime training and deployment tasking policies which guide the Naval Construction Force. Whether they are serving the intended purpose of reinforcing the preparedness for the war mission is the subject of the analysis discussed in Chapter IV.

1. Formal Training

Ultimate responsibilty to organize, train, equip, prepare and maintain the readiness of Navy forces is vested in the Chief of Naval Operations (CNO). The Chief of Naval Education and Training (CNET) is responsible to the CNO for matters relating to formal training within the Navy. [Ref. 15] Formal training for the NCF is administered by the Naval Construction Training Centers (NCTC) located at Port Hueneme, California and Gulfport, Mississippi. NCTCs report to CNET via the Chief of Naval Technical Training (CNTT). The mission of the NCTCs is:

> To administer those courses and special training programs assigned by the Chief of Naval Education and Training, to train enlisted and officer personnel to prepare them for early usefulness in their designated specialties and to supplement on-the-job training by providing advanced or specialized training when such training can be more advantageously given in a formal course.
>
> [Ref. 15:encl (1),P.1]

Although the actual conduct of formal training is accomplished by the NCTCs and other commands that are organizationally under the CNET administrative chain of command, training requirements are established by Commanders Construction Battalions Pacific and Atlantic (COMCBPAC/COMCBLANT) who are in the fleet operational chain.

Training standards for the NCF are contained in the Personnel Readiness Capability Program (PRCP) documentation which is promulgated by Commander Naval Facilities Engineering Command.

a. Types of Training

The training of Naval Construction Force personnel can be separated into three categories; formal training, fleet or on-the-job training, and factory training. [Ref. 17]

(1) Formal training. Formal training is administered by CNET. It includes rate related training such as A and C schools which are taught at the NCTCs and functional training such as embarkation training which is not normally rate related.

(2) Fleet Training. General Military Training (GMT), infantry type military training, leadership training, Navy human goals program training, crew training and Special Construction Battalion Training (SCBT) collectively comprise the broad area of fleet training. Fleet training is in large part administered by the individual unit receiving the instruction although courses such as SCBTs may be presented by others.

(3) Factory Training. Sponsored by the Civil Engineering Support Office (CESO), factory training involves manufacturer or vendor representatives who provide instruction on a particular piece of equipment or system. This instruction may occur at the representatives plant, in a Navy facility or at the job site.

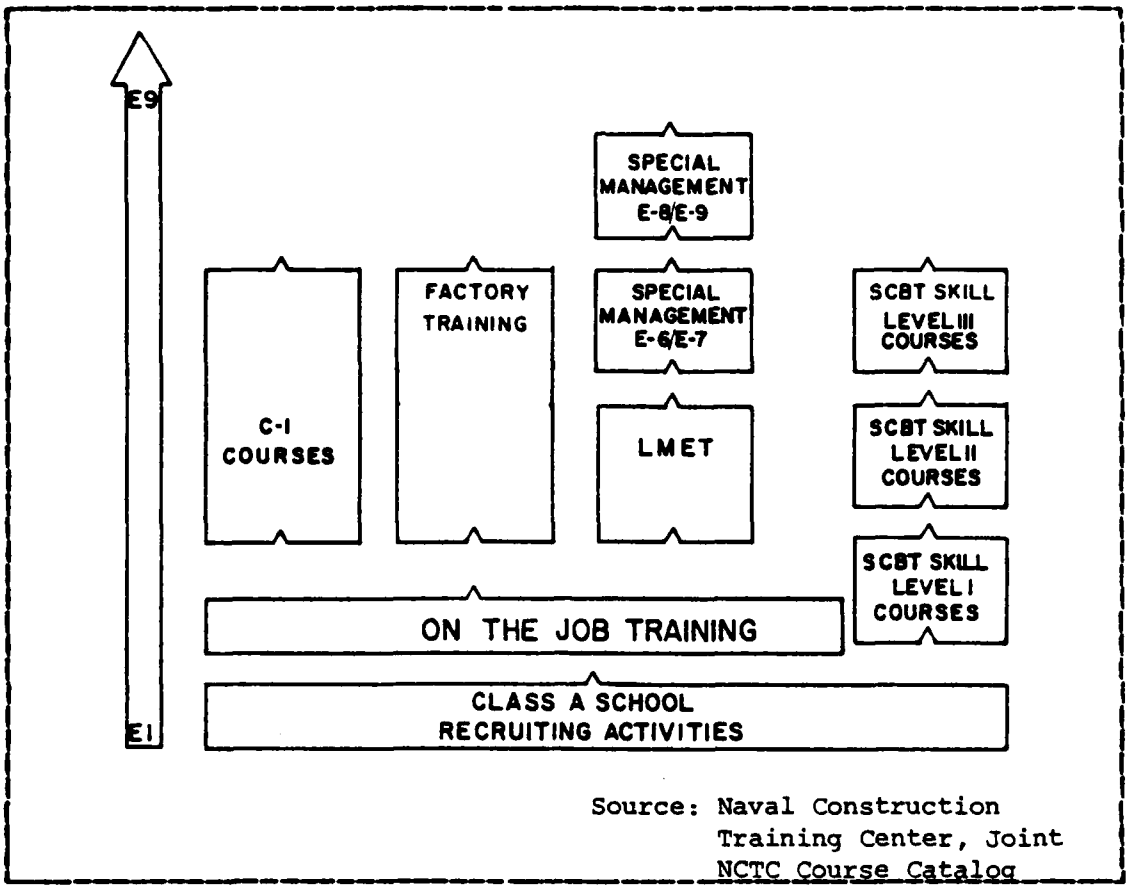


Figure 3.1 Occupational Field 13 Career Training Pattern.

Each type of training contributes to the overall technical and professional development of NCF personnel at various stages in their professional development. The various types of formal training provide the theoretical foundation for skill development. Fleet training and on-the-job training reinforce and expand upon these basic skills. Figure 3.1 depicts the general training progression for Occupational Field 13 personnel during a 20-30 year career.

b. NCP Training Program and Skill Requirements

Basic training policy and Naval Mobile Construction Battalion skill requirements are specified in CCBINST 1500.20 series. Citing Navy Regulations, the instruction charges the unit Commanding Officer with; "the responsibility for increasing the specialized and general professional knowledge of personnel under his command by conducting frequent drills and classes, and by utilizing appropriate fleet and service schools." [Ref. 15:p.2] It provides specific training program objectives and policy guidance which are outlined below.

(1) Training Objectives. A battalion training program is to be structured such that it ensures that the battalion is fully capable of performing its Naval warfare missions of mobility, command/control/communications, special warfare and construction. The battalion shall be capable of; carrying out a high quality, timely construction program, defending itself from enemy attack, providing an immediate disaster recovery force, and rapid mobilization and deployment to carry out any or all of the above tasks. [Ref. 5]

In designing the training program for an NMCB, the command should strive to acheive the following objectives:

1. Afford personnel the opportunity to gain experience in as wide a variety of subjects as possible within the constraints of the mission and the individual's capabilities.
2. Instruct personnel in the best safety practices.

3. Train in the techniques of the most modern type of construction as well as advanced base contingency type construction.
4. Provide the best possible leadership training and an oppurtunity to practice leadership to personnel displaying strong leadership potential.
5. Strive to retain crews/squads/platoons intact as a working and fighting unit.

[Ref. 5:p.4]

(2) Policy Guidance. The battalion training program is intended to improve the battalion's collective skill levels rather then to raise the advancement qualifications of individuals. The program should train sufficient personnel during the homeport period to ensure that all skill levels prescribed by the instruction are met through the duration of the pending deployment. Battalions failing to deploy with 100 percent skills attainment shall upgrade deficient skills by additional technical or on-the-job training at the deployment site. A balance between the operational and training requirements should be sought commensurate with the individual battalion's circumstances. [Ref. 5]

During time of war or national emergency when a battalion is deployed to a combat zone or engaged in high priority work, the effort devoted to formal training shall be limited to that required to ensure the health and safety of personnel, equipment availabilty and military readiness. When deployed to a peacetime location the battalion's primary mission is training and secondly completion of assigned projects. The primary battalion objective while in homeport is to ensure attainmant of training requirements as set forth in the instruction and to prepare for the upcoming deployment. [Ref. 5]

(3) Skill Requirements. Specific training requirements for technical subjects, drills and exercises, nuclear, biological and radiological (NBC) operations, and combat skills are contained in the enclosures to CCBINST 1500.20 series instruction. These requirements which identify both skills and skill levels as well as prescibing the number of personnel that should possess a given skill, are the minimum needs to meet the peacetime and contingency missions. Appendix C which is abstracted from the 1500.20E instruction, identifies the battalion skill requirements.

Management of NCF skill inventories and unit training programs is greatly aided by the Personnel Readiness Capabilty Program (PRCP). PRCP is an integrated, computer based system that identifies the required occupational skills, provides the means for determining qualified personnel; and correlates formal training programs and skills.

c. Personnel Readiness Capability Program (PRCP)

The Personnel Readiness Capability Program (PRCP) was developed in the mid-1960's as a personnel management tool. Since its implementation, periodic upgradings of the PRCP have enhanced its usefulness to all levels of command in the areas of personnel management and training. PRCP has been integrated into the Civil Engineer Support Management Information System (CESMIS) data base. The PRCP has standardized the active and reserve battalion skill definitions and coordinates these with courses of instruction. [Ref. 2]

The PRCP was developed to assist in determining the state of readiness and skill capability of a Seabee unit at any time, and to plan for training and personnel support. When the data indicates that the actual capabilities do not

meet the specified requirements, personnel can be scheduled into training so as to eliminate skill deficiencies. The PRCP relies on three factors:

1. A comprehensive statement of skill requirements.
2. An accurate inventory of existing skills.
3. An automated data processing capability to arrange the data in a useful format.

[Ref. 5:p.D-9]

Specification of skill requirements is a function of the NCF type commanders. The skill inventory is based on data submitted by individual NCF units and is routinely updated as personnel attain new skills. Data structuring and manipulation for various managerial purposes is at the heart of the automated data processing (ADP) based PRCP. [Ref. 5]

The PRCP is described in the three volume NAVFAC P-458 [Ref. 18]. Volume I contains skill definitions applicable to the NCF. A detailed task analysis of each skill definition as well as procedures to be used in classifying attained skill levels is contained in Volume II. The third volume contains a thorough description of the system documentation including the ADP procedures and outputs.

2. Peacetime Construction

Basic doctrine and policy governing the employment, deployment and readiness of the active Naval Mobile Construction Battalions (NMCBs) is contained in OPNAVINST 5450.46G, [Ref. 6]. The peacetime construction policies outlined in the following paragraphs is derived from this document.

The employment of Seabees to perform major peacetime construction projects was begun after Korea. Then as now, peacetime construction served several purposes. Its primary stated aim is to maintain NCF construction capabilities through on-the-job-training. Secondary benefits include directly contributing to improvement of overall Navy readiness, and personal and professional development of the individual.

NMCB's undertake peacetime construction tasking to maintain their construction capabilities and enhance their readiness to accomplish the war mission. The primary consideration in planning the peactime employment is to derive the maximum readiness training. Secondly, project planning should seek to ensure project accomplishment since significant operational benefits to the Navy are derived from emplcyment of NMCB's.

Major claimants and managers of non-appropriated funded programs desiring NMCB project support must submit an annual request for such work to Commanders in Chief, U. S. Atlantic or Pacific Fleets, or U. S. Naval Forces Europe, as appropriate. These requests for project assistance must provide sufficient detail to permit the evaluation of each project's appropriateness for readiness training. The area commanders submit their two-year NCF employment plans proposal to the CNO with a copy to COMNAVFACENGCOM. Based on the submitted plans, CNO promulgates the initial approved NMCB Force Assignment Plan "for comment." The Force Assignment Plan which indicates the level of NCF effort allocated to each geographic area and proposes a NMCB deployment schedule is commented on by the area commanders. Shortly thereafter CNO promugates the final version.

IV. ANALYSIS

The preceding chapters provide a background and lay the foundation upon which the following analysis is structured. A basic understanding of the relationships and organizational components which comprise the NCF is essential to appreciating the nature of the research questions and the direction which the analysis takes. Knowledge of the mission formulation process sheds light on the complexity of the mission. Identifying the NCF mission is an exercise in integrating the ideas contained in various documents with consideration given to historical data. Training and peacetime construction tasking policies are basically drawn from two policy documents: CCBINST 1500.20E and OPNAVINST 5450.46G, respectively. This chapter compares the policies contained in these documents with war mission parameters.

The comparison is preceded by brief definitions and a discussion of the evaluation process. The definitions relate to and clarify the analytical approaches pursued in the analysis which follows.

The discussion is conducted at two levels. The first level of analysis is at the source of the policy and merely seeks to verify that the stated policies are consistent with the mission. The second level of analysis examines the congruency between current policies and the war mission at the implementation or working level.

A. EVALUATION DEFINED

The evaluation process according to Stuffelbeam et.al. [Ref. 19] is "seized with a great illness." In a lengthy, comprehensive treatise on educatinal evaluation which seeks to remedy this malady, these authors provide three definitions of evaluation which have gained common acceptance: the measurement definition, the congruence definition and the judgement definition. Each of these possess relative advantages and disadvantages which are discussed below.

1. The Measurement Definition

The measurement definition simply equates evaluation to measurement. By applying the various instruments of measurement, evaluators can collect and manipulate great volumes of data and "objectively" compare these with established standards. The measurement defintion has at least three major limitations which result in a process which is narrow in focus and mechanistic in approach. First, evaluations tend to become a science of instrument development and interpretation. Secondly, the instrumental focus obscures the fact that value judgements are involved. The third major flaw in the pure measurement based evaluation is that their is a tendency to evaluate that which is measureable while discounting "intangibles": anything that can not be measured. [Ref. 19]

2. The Congruence Defintion

Evaluation based on congruence entails determining a fit or congruence, between performance and objectives. The evaluation process becomes a rational base by which the

evaluator can draw conclusions. The process involves; 1) determining the objectives of the program, 2) selecting learning experiences to attain these objectives, 3) structuring the learning experience for presentation and 4) determining to what extent objectives are attained [Ref. 20]. The congruence definition provides certain advantages such as: allowing the evaluator to judge the process as well as the product. It also provides a focus for the evaluation by defining specific objectives and it provides a feedback mechanism. The congruence definition also has major disadvantages. First, focusing narrowly on objectives, it places the evaluator in a constrained technical role. Secondly, there is a tendency for evaluators to regard the objectives as statements of behavior. Consequently, everything is assessed in terms of behavioral consequences whether appropriate or not. A final disadvantage of the congruence definition is that owing to the emphasis on behavior, evaluators tend to apply the technique as a terminal event thereby negating the intended feedback feature. [Ref. 19]

3. The Judgement Definition

Equating evaluation with professional judgement holds many advantages. Evaluations of this type rely on the expertise and experience of the chosen experts and thus are easy to implement. The interplay of issues and intangible considerations are taken into account implicitly. And, the evaluation is accomplished very quickly. The judgement definition however, raises questions of reliability and objectivity. Because this type of evaluation is internal to the evaluator, it provides no indication of the data which was considered nor on the standards used for the assessment. [Ref. 19]

In the analysis that follows the author attempts to integrate the positive qualities inherent in each of these definitions while mitigating the negative consequences. This point is clarified in the discussions which precede each of the analysis.

B. EVALUATING CONGRUENCY AT THE SOURCE LEVEL

In the analysis which follows, the content analysis technique is used to evaluate the congruency between the war mission and the training and peacetime construction tasking policies at the source level. The content analysis is a process which like the congruence definition of evaluation relies on an objective referent and built-in criteria. The process uses these objectives and criteria in developing a measurement process which is both objective and scientific. Yet, as will be demonstrated below, the process retains a broad perspective and is not devoid of the application of judgement.

1. Content Analysis

The analysis of communicative content whether in the form of speech, written documentation, visual works or symbolic gesture, has and continues to be of great interest to theologians, philosophers, academicians and politicians alike. The study of communication focuses on interaction through messages which connect communicating parties to evoke a meaningful response. But what is meaningful and relevant is not always brought to light by mere inspection nor is it always accessible by casual observation. The analysis is performed with the purpose of illuminating or making possible inferences about something that is not

otherwise apparent. In the words of Gerbner (1969); "In the analysis of messages this particular 'something' is a type of significance or 'content' that becomes available to an analyst who uses particular methods for specific purposes." [Ref. 21:p.x]

Berelson, 1952, has compiled a detailed summary of the many uses of content analysis. He provides the following definition:

> Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication.
>
> [Ref. 22:p.18]

Cartwright, 1966, suggests liberal interpretation of Berelson's definition by proposing that communication be thought of as any linguistic expression, and by asserting that the "manifest" restriction be deleted [Ref. 23]. Either definition is well suited for the process which is employed in the following analysis. Prior to actually conducting the analysis, a clarification of the "science" and the "art" aspects of content analysis is in order.

As discussed above, the need for a systematic and objective means of determining various types of significance in communicative messages has led to the development of content analysis as a distinct field in research [Ref. 21]. Scientific procedures can be used to test alternative contentions and to clarify their form to permit automatic processing. The analyst and/or the computer can then process data and call attention to certain properties that would otherwise not have been discovered. What is concluded is a matter of science because there are very definite procedures for determining the resultant conclusion. However, what to look for, what to conjecture about and how

to process the data is a matter of art which relies on the judgement of the analyst. [Ref. 24] The point is made that although more systematic and objective approaches are needed to give credence to the analytical process, these do not replace intuition, judgement, and insight [Ref. 21].

In the following paragraphs the content analysis process will be used to examine the congruency between current policies in the areas of training and peacetime construction tasking and the war mission. The art of the analysis entailed this writer establishing "critical mission paramters" based on a subjective enterpretation of the NCF war mission. The author has attempted to present sufficient evidence in the preceding chapters to support the use of the chosen parameters thereby rendering them "less subjective." Additional judgement or art come into play in developing the measurement scale and scoring criteria. The actual comparison and grading constitutes the scientific portion of the analysis.

2. The Process

This section presents the content analysis. The first phase in the process was to redefine the NCF mission in terms of mission constraints or parameters. In the second phase the author identifies and tabulates readiness states or attributes which contrapose the mission parameters. The third phase entails the author identifying training and/or peacetime construction tasking policies corresponding to the readiness states. The final phase of the process involves reviewing CCBINST 1500.20E and OPNAVINST 5450.46G to assess the degree of congruency between the policies expressed in these documents and the policies outlined in the previous phase. The assessment process involves scoring each occurence of support or

contradiction based on a numerical scale which is presented in the text.

The mission of the NCF was identified in section B of the preceding chapter in terms of mission areas. Although the mission of the NCF is broadly definable, it is difficult to fully develop and bound. For purposes of the analysis the author found it necessary to redefine the mission in a narrower more workable form. This was accomplished by first reviewing the mission related documents including: the Naval Construction Force Manual [Ref. 2], the Seabee Construction and Technology defintion paper [Ref. 3], OPNAVINST 3501.115A [Ref. 4], and OPNAVINST 5450.46G [Ref. 6]. Based on this review, the historical documentation previously presented, and personal knowledge of OPLANs, the author identified several salient mission parameters. The first phase of the analysis involved redefining the NCF mission in terms of six "critical mission parameters." They are:

1. The great volume of construction and repair work required in the early days of a contingency will result in critical manpower shortages.
2. The types of work anticipated are highly diverse.
3. Severe time constraints are imposed on the majority of work assignments.
4. A very high degree of coordination and integration will be required with supported commands, among NCF units and internally.
5. Disaster recovery in a nuclear, biological and chemical (NBC) environment imposes special constraints in addition to the above.
6. NCF units must be prepared to fulfill their military defense role on call.

The second phase of the analysis process involves identifying the desired states or attributes of readiness which address each of the mission parameters. Table 1 lists these. Each of the desired states or attributes may address more than one parameter. As an example, maintaining a strong command, control and communications function would contribute to improved readiness in each of the critical parameters. The list of selected states or attributes does not constitute all possible alternatives. Rather, it proposes relatively straightforward but not necessarily easily implementable, qualities which can be directly influenced by training and/or peacetime construction tasking policies. Logical alternatives such as increasing the number of NCF personnel and developing new techniques and systems for wartime construction are not included because they are considered out of the realm of training and construction tasking policies.

Having identified the readiness needs in terms of desired states or attributes, the key question is asked; "How can training and peacetime construction tasking bring NCF units closer to the desired states or instill in them the special attributes?" Suitable training and/or peacetime construction tasking policies which would contribute to NCF readiness in the specified area are also presented in Table 1. Continuing the previous example, units can both train in a classroom and conduct field exercises at various organizational levels to maintain a strong command, control and communications readiness posture.

The final phase is to review the key policy documents CCBINST 1500.20E which outlines training policy and OPNAVINST 5450.46G which prescribes construction tasking policy, and to evaluate if and to what extent the policy encourages movement towards the desired states or attainment of the specified attributes. The basis for drawing

TABLE I

Desired States and Attributes of Readiness with

Suitable Policies to Contrapose Mission Parameters

DESIRED STATE/ATTRIBUTE	SUITABLE TRAINING/PEACETIME CONSTRUCTION POLICIES
a. Know Operations Plan (OPLAN) requirements and be prepared to respond to these.	i. Review and update OPLANs regularly. ii. Stress OPLAN requirements in training and peacetime construction tasking. iii. Drill and exercise in OPLAN scenarios.
b. Deploy NCF units to probable contingency sites.	i. Include proximity to contingency site as tasking selection criteria. ii. Conduct training exercises at contingency sites.
c. Maintain a strong command, control and communications (CCC) capability.	i. Provide formal CCC training at all levels. ii. Exercise the CCC function routinely; internally, amongst NCF units and with supported commands.
d. Maintain a strong assessment, planning, and estimating (P&E) capability.	i. Train in assessment, P&E. ii. Exercise the assessment, P&E function routinely; internally.
e. Maintain a high degree of mobility.	i. Train in embarkation and mobility.

	ii. Conduct regular embarkation and mobility exercises.
f. Maintain a high degree of flexibility and adapability.	i. Foster strong leadership through formal training. ii. Foster strong leadership through construction assignment. iii. Maintain unit integrity in formal training and in construction crews. iv. Train and exercise in various organizational subgroupings and specialized detachments. v. Provide for a solid foundation in the technical basics. Stress temporary or semi-permanent contingency type construction. vi. Provide for a broad base of technical expertise via formal training. vii. Select projects which require basic skills as well as the expertise needed in a war or contingency. viii. Promote cross technical training both formal and in deployment construction.
g. Maintain NBC defense capability.	i. Train individuals and specialized teams for NBC defense. ii. Drill regularly in NBC surveilance and recognition.

	iii. Conduct regular drills in NBC recovery. iv. Exercise and drill in simulated NBC environment to maintain ability to conduct limited operations.
h. Maintain a sound military organization.	i. Retain unit integrity in all battalion evolutions to the extent possible. ii. Train to attain a broad based knowledge of defensive tactics. iii. Train and qualify individuals and crews in weapons. iv. Drill and exercise regularly in military defense.

inferences and conclusions from the analysis is a "score-card" (Table 2 below) which assigns or deducts points for each attribute category according to the level of support contained in the policy document. Each statement of support or contradiction is scored in accordance with the numerical scale detailed below.

specifically and directly support.....(2)

indirectly support.....(1)

not addressed in text.....(0)

indirectly contradicted.....(-1)

specifically and directly contradicted.....(-2)

In developing the scoring scale the author sought to fulfill several criteria. First, since the evaluation was intended to assess policy congruency, the scale had to provide a means for distinguishing between policies that are consistent with or support the desired policies, and those that contradict them. The author chose positive numbers to indicate policies that support while negative scores indicate contradiction of the desired policies. The number zero serves to identify the policies that are not mentioned in the text. The second consideration was to structure the scale such that it could be used to indicate the degree of support or contradiction contained in the policy documents. At the same time a third criteria was that the scale be uncomplicated so that it could be easily understood and objectively applied. These criteria were met by providing a graduated scale with five relatively distinct categories. Although the absolute value of the numbers holds no special significance, when coupled with the number of occurance they

provide an indication as to the type and degree of support for a given policy, contained in the document. The next two paragraphs explain how the scale is applied.

A score of 2 or -2 is assigned to each occurance of direct and unequivocal support for or contradiction to a given policy. For example, a statement like; "Each NMCB shall be capable of being organizationally deployed or redeployed..." directly supports a policy of maintaining a high degree of mobility [Ref. 6:p.3]. Indirect support or contradiction, 1 or -1, is indicated by statements which promote or reject policies which are directly related to a desired policy. The relationship must be such that in following the related policy, the unit would be pursuing or rejecting the desired policy as a matter of course. An example of a statement which indirectly discourages or contradicts a policy of promoting cross-rate training is; "If a man has completed all training courses in his rate for which he is eligible and he is not required for OJT projects or other battalion duties, then he should be considered for cross-rate training in a rating closely associated with his own or in a course of his choice " [Ref. 5:encl (1),P.2].

Scores are cummulative that is, each occurance of support or contradiction is added to or subtracted from the total for the given attribute. Since the listed states or attributes are desirable from the standpoint of contributing to an increased state of readiness, any cummulative score of zero or less represents nonresponsive policy for that particular quality.

3. Results

Table 2 provides the results of the content analysis performed on CCBINST 1500.20E and OPNAVINST 5450.46G. The training document CCBINST 1500.20E contained several occurances of direct support for desired policies in six of the

TABLE II

Results of the Content Analysis at the Source Level

DESIRED STATE/ATTRIBUTE	n*	CUMMULATIVE SCORES 1500-20E	n	5450-46G
a. Know CPLAN requirements and and be prepared to respond to these.	5	7	3	4
b. Deploy NCP units tc probable contingency sites.	0	0	1	2
c. Maintain a strong CCC function.	4	7	1	1
d. Maintain a strong assessment and P&E function.	0	0	0	0
e. Maintain a high degree of mobility.	7	14	3	6
f. Maintain a high degree of flexibility and adapability.	17	16	4	4
g. Maintain an NBC defense capability.	3	5	0	0
h. Maintain a sound defensive military organization.	6	11	0	0

* - number of occurances

eight areas. The two areas which are not addressed in the text of the document are: deploy NCF units to probable contingency sites (attribute b) and maintain a strong assessment function (attribute d). Deploying to and exercising at probable contingency sites would provide NMCB personnel with opportunities to learn by training in specific settings. This forum is considered a vital training tool since it teaches unit commanders and individuals to cope with realistic environmental constraints which affect communications, coordination, operations and logistics. The need for maintaining a capable assessment function is expected to be especially pronounced in the early days of a war or contingency when rapid and accurate damage assessment will be required to expedite repair work.

On the subject of peacetime construction tasking, OPNAVINST 5450.46G provides direct policy support for three of the eight readiness areas: know OPLAN requirements (attribute a) deploy NCF units to probable contingency sites (attribute b) and maintain a high degree of mobility (attribute e). Indirect support is provided for maintaining a strong command, control and communications capability (attribute c) and for maintaining a high degree of flexibilty and adapability (attribute f). The document did not address the areas of assessment and planning and estimating (attribute d), NBC defense (attribute g), or defensive military organization capabilities (aatribute h) in the policy portion of the text. Reference is made to the defense military role in the mission review which preceded the policy discussion.

A further discussion of these findings is deferred until the next chapter. In the following section training and peacetime construction tasking policies will be examined at the working or implementation level.

C. EVALUATING CONGRUENCY AT THE WORKING LEVEL

The working level analysis relies on the same policy standards which were developed in the content analysis and presented in Table 1. The analysis follows the congruence definition to the extent that it seeks to indirectly assess a process (policy implementation) with an objective referent for the comparison. Owing to the author's desire to present a broad perspective, and constrained by available data, the analytical process at the working level is more judgemental than the content analysis.

The analysis is divided into two parts for the discussion. The first part is the evaluation of training policy and the second part is the evaluation of construction tasking policy. These are presented below.

1. Analysis of Training Policy

The current official NCF training policy is contained in CCBINST 1500.20E and has been outlined in the previous chapter. The instruction not only provides the general training objectives and philosophy, it is operational at the implementation level since it delineates specific skill requirements. These requirements have been integrated into the PRCP system and are the basis for allocating training resources as well as for rating the NMCB readiness posture. CCBINST 1500.20E states that; "A battalion's principal mission while in homeport is to ensure satisfactory attainment of training requirements defined by this instruction and to prepare for the next deployment." [Ref. 5:p.3] The following paragraphs examines this policy guidance at the working level.

Assisted by regimental planners, battalion personnel schedule training evolutions throughout the homeport period aimed at meeting the minimal skill requirements and any additional skill needs for the upcoming deployment. Much of the training is formal training in technical and military subjects. The formal training is balanced with on-the-job and crew training and several major exercises. The other major homeport evolution is project planning for the next deployment.

To answer the question, "What training are NMCBs actually receiving?", the current and most recent homeport training schedules for the four Pacific Fleet battalions and the current or upcoming homeport training schedules for three Atlantic Fleet battalions were examined. Some observations can be made with little or no analysis. The most striking characteristic of the training schedules is the similarity in the homeport training patterns for all battalions regardless of whether they are from the Alantic or Pacific fleet. The typical homeport includes formal training in the form of SCBTs, Disaster Recovery Training, and factory training. A block of military training which includes marksmanship, unit weapons, land navigation, defensive tactics, first aid and sanitation, NBC defense and escape, evasion and survival training and culminates with a battalion field exercise, is conducted during each homeport. Mobilization training and a major mobilization exercise, leadership and management training, and crew training which may include some homeport training projects are also provided to homeported battalions. Atlantic Fleet battalions also train in contingency construction and rapid repair of runways. Figure 4.1 portrays a typical homeport schedule. An actual schedule is attached as Appendix D.

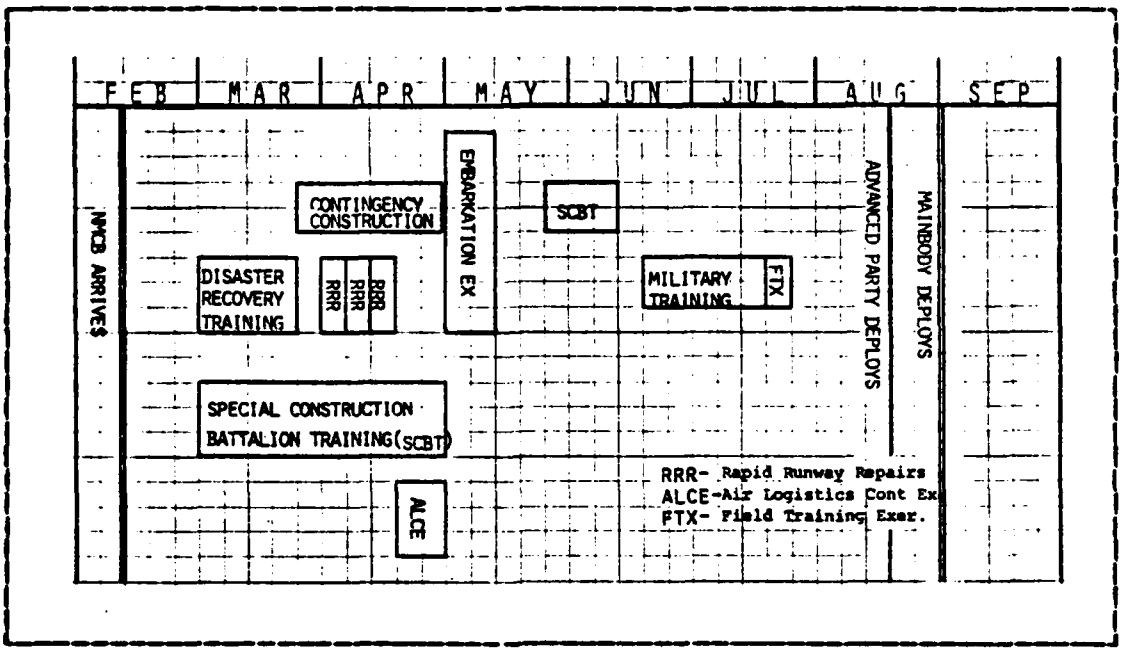


Figure 4.1 Typical NMCB Homeport Training Schedule.

In examining how this training contributes to preparing for the war mission, several approaches are possible. The individual training courses or exercises can be dissected through a task analysis. Then, the component tasks can be compared with the war requirements. In pursuing this approach one must take several factors into consideration. First, there is the shear magnitude of the effort required to break down each training evolution into its component tasks and the challenge of intergrating the various results. Another consideration is that the analyst must determine to what level the tasks are to be sub-divided for the comparison. In this regard the analyst runs the risk of breaking the training evolution down to trivial tasks and thereby rendering them of little value for the comparison. The analyst can reduce the amount of effort required by selecting at random or taking representative

training samples and analyzing these. But by so doing, the analyst risks overlocking some glaring deficiency which may exist in one of the training areas not analyzed.

A second alternative would be to match the training requirements with OPLAN requirements. This would constitute a very rough comparison at best owing to the level of engineering detail which is contained in OPLANs. A third approach is to assume that the minimal training requirements specified in CCBINST 1500.20E meet the war mission needs and to examine battalion performance at meeting the minimum requirements. This approach is not pursued on several accounts. Battalions are motivated to meet the minimum requirements by two strong factors. The first is regimental assistance in seeing to it that these requirements are met. Second, battalions are continually being evaluated on their performance in meeting the requirements as one aspect of readiness. Based on personal experience as the PRCP monitor for the Atlantic NCF, the author can state that in general, battalions do well in attaining PRCP skill requirements. Deficiencies are typically found in the higher level specialty skills such as airconditioning and refrigeration technician and cable splicing which have limited annual school quotas that are controlled by NMPC and are to some extent beyond NCF control.

Given that this study is to some degree exploratory in nature and owing to the author's desire to assess "the broad picture", a third alternative was adopted as the most efficient approach. In the analysis it is presumed that battalions do train to meet the minimum training requirements as set forth in CCBINST 1500.20E. The question then becomes; "Are the minimum requirements congruent with the war mission?" The comparison involves examining each of the requirements based on PRCP descriptions and/or the authors knowledge of a given skill or type of training and comparing

it with the suitable policies outlined in Table 1. The analysis seeks to identify exceptions, that is, training that does not fall within the broad policies identified in Table 1, and to verify if all policies are addressed by the requirements. It starts by examining the crew skills contained in enclosure (2) to CCBINST 1500.20E which are included in Appendix C and considers only the operationally related requirements excluding support related skills such as military customs inspectors. The results of the analysis are presented in the next several paragraphs.

a. Results

A comparison of the individual training requirements with the suitable policies as set forth in Table 1 reveals that all of the crew skills have a potential use in the event of a contingency and are therefore relevant to OPLAN requirements. The mobility attribute is supported by both formal instruction and exercise requirements. Of the many individual skill requirements, all appear to contribute to maintaining an adaptable and flexible force through promoting basic skills and selected specialized technical skills. For instence, one might question the appropriateness of training NCF personnel in woodworking and millworking or inter-office and public address systems in the context of the war mission. Yet, these skills are highly desirable for peacetime construction and provide the NMCB with several specialized skills which are potentially applicable during times of war or in a contingency (e.g., working with shop drawings, dressing and squaring lumber, making wocd joints, setting line poles, and climbing and working aloft). Requirements for combat skills and NBC/rescue training are also consistent with the policies which are considered appropriate for attaining the desired readiness states or attributes.

Notably lacking are specific requirements to train with supported commands in OPLAN scenario exercises. Requirements for conducting formal training and exercises to reinforce a strong CCC function at all levels are also missing. Although planning and estimating requirements appear to provide for maintenance of these skills at varying levels, the assessment skill, specifically as it relates to war damage repair, is not addressed. The policy regarding cross-technical training appears to contradict itself. On the surface the document appears to tout the virtues of cross-rate training and encourage it. Yet, this encouragement is encouched in such qualifying statements as; "...and he is not required for OJT projects or other battalion duties, then..." that it would appear that cross-rate training is being promoted as a measure of last resort. Ordnance recognition training and training to operate in a NBC contaminated environment is also lacking in the minimum requirements. Table 3 summarizes the results of this and the following section which assesses congruency in construction tasking policies.

2. Analysis of Construction Tasking Policy

Basic doctrine and policy guidance for the employment, deployment and readiness of the active NMCBs is contained in OPNAVINST 5450.46G. As is the case with the training policy document, Instruction 5450.46G is a working level document which provides the basic guidance and establishes procedures for the selection of peacetime construction tasking. Following a brief explanation of the project submission and approval procedure, an examination of NAVFAC prepared NCF employment plans for fiscal years 1983 through 1985 is discussed.

TABLE III

Results of Working Level Analysis

DESIRED STATE/ATTRIBUTE	INSTRUCTION POLICY ADDRESSES Y-YES/N-NO 1500.20E	5450.46G
a. Know OPLAN requirements and and be prepared to respond to these.	N	N
b. Deploy NCF units to probable contingency sites.	N/A*	N**
c. Maintain a strong CCC function.	N	Y
d. Maintain a strong assessment and P&E function.	Y**	Y**
e. Maintain a high degree of mobility.	Y**	N/A
f. Maintain a high degree of flexibility and adapability.	Y**	Y
g. Maintain an NBC defense capability.	Y**	N/A
h. Maintain a sound defensive military organization.	Y	N/A

*-not applicable

**-except as discussed in the text

Near the start of each fiscal year CNO promulgates a guidance letter to the fleets advising them on the types of construction and repair projects to be accomplished. The Fleet Commanders submit to CNO, with a copy to NAVFAC, a two year NCF Employment Plan proposal for their respective areas. In preparing the proposed NMCB construction programs, the Fleet Commander staffs are instructed to consider project requests, training requirements and contingency factors. Project submissions are prepared in detail to permit evaluation of each project's appropriateness for readiness training and indicate both the Area Commander's relative priority for each project and its funding status. NAVFAC reviews the fleet proposals and prepares a package for CNO which includes an analysis of the proposals, comments on how effectively the CNO's guidance was met, provides statistical summaries for each deployment site, and makes specific recommendations. CNO subsequently publishes the approved NMCB Force Assignment Plan. [Ref. 6]

The workload analysis of the two and one half year NCF employment plans for fiscal years 1983 through 1985 is presented in appendix E. The analysis package contains a statistical summary, an operational and repair workload summary, a graphical workload analysis, a listing of major projects, an UCT employment summary and a Pride and Professionalism project summary. The latter two summaries are not considered for purposes of this analysis. The employment plan statistical summary provides a division of allocated mandays by fiscal year and deployment site and contains a breakdown of tasking by four workload categories: operational, housing, community and repair. A comparison of the relative mandays allocated to operational and repair work is provided in the operational/repair workload summary. The graphical analysis provides a pictorial presentation of that which was presented in the statistical summary in

numerical form. Major projects are listed by site with their corresponding manday estimates, construction type category, estimated cost and overall priority. The interest in these data for purposes of this paper is to attempt to answer the questions; "What does the deployment tasking workload look like?" and "How does deployment tasking contribute to preparing for the war mission?" The analysis which follows seeks to clarify these points.

The temptation to acquire additional project information for purposes of reducing the projects into their component tasks was resisted on two accounts. First, the author wanted to assess the working level policies in general as opposed to dwelling on a specific aspect of these. Secondly, given the exploratory nature of the study, acquiring the additional information would have required additional resources without any assurance of a commensurate return.

The standards against which the peacetime construction tasking policies contained in OPNAVINST 5450.46G are compared are the policies incorporated in Table 1. The policies listed in Table 1 were evaluated as to their appropriateness for analysis of construction tasking policies. Those which were considered applicable for inclusion in the construction tasking instruction are summarized below:

1. Stress OPLAN requirements in peacetime construction tasking.
2. Deploy units to probable contingency sites.
3. Exercise the CCC function routinely.
4. Exercise the assessment and planning and estimating functions routinely.
5. Foster strong leadership through construction assignments.
6. Maintain unit integrity in construction crews.

7. Provide for a solid foundation in the technical basics; stressing temporary or semi-permanent contingency type construction.
8. Provide for a broad base of technical expertise.
9. Promote cross-technical training.

The approach taken in this portion of the analysis resembles that which was followed in analyzing the minimum training requirements. The individual projects contained in the major projects list were examined and compared for congruency with the above policies. Inappropriate or questionable projects are identified and discussed. The second phase of the analysis entailed identifying the desirable policies that are not addressed by the major project tasking. The author relied on project titles, construction type codes, and manday estimates supported by personal experience and judgement in deducing what types of work are involved in each project. The results of the analysis are discussed in the following paragraphs.

a. Results

Using as an example a project which might be questioned as to its appropriateness for improving NCF readiness for going to war, the question was asked; "How does constructing a child care facility in Sigonella, Sicily contribute to NCF readiness?" Indeed, an instinctive response might be; "Not at all. Seabees will not be constructing child care facilities in a war environment." Yet, by examining some of the typical types of work which could go into constructing a $625,000 child care facility, a different response is evoked. The 4,000 mandays to construct the facility could provide for training in surveying; grading and related equipment operations; soil treatment; foundation work involving construction of

concrete formwork, concrete construction and possible dewatering; installation of rough and finished mechanical systems, electrical wiring, masonry construction, interior partition construction, hanging doors and installing windows, construction of a roof system or systems and various other related construction tasks. Consistent with the peacetime construction tasking policies outlined above, this project provides opportunities to foster strong leadership, provide on-the-job reinforcement of many basic technical skills while affording an opportunity for maintaining specialty skills such as environmental systems installation, and provides sufficient diversity in the types of construction involved to permit cross-technical training without disrupting unit integrity. In addition, a project of this nature provides ample opportunity to exercise the battalions planning and estimating, and command, control and communications function.

Of the desired construction tasking policies listed on pages 76-77, three are not apparent in the summary of current and future major projects. They are 1) stress OPLAN requirements in peactime construction tasking, 2) deploy units to probable contingency sites and 3) exercise the assessment function routinely. The first discrepancy is made apparent by the general lack of advanced base or contingency type construction projects. The second policy ommission is not discussed further because of its classified nature. In reference to the final deficiency, it is acknowledged that finding situations in which the damage assessment function can be exercised in peacetime is difficult.

The general conclusion is that the current working level policies related to training and peacetime construction tasking do support and contribute to war readiness policies. A further discussion of these findings is deferred until the next chapter.

V. CONCLUSION AND RECOMMENDATIONS

This thesis sought to answer the question:

"To what extent are the current NCF training and peacetime construction tasking policies congruent with the war mission?"

In pursuing this question the author sought to maintain a broad perspective of current policies. Yet, to lend objectivity to the macroscopic approach, the elements to be compared had to be expressed in unambiguous and consistent terms. The challenge thus became one of selecting the relevent documents and extrapolating from them parameters for the comparison.

A. THE ANALYSIS PROCESS

The NCF mission was first identified in general terms based on a review of NCF related documents and a historical review. It was redefined in terms of six critical parameters for purposes of the comparison. Desired readiness states or attributes to contend with the mission constraints were ultimately translated into desired training and construction tasking policies to acheive these qualities. NCF training and peacetime construction tasking policies are contained in CCBINST 1500.20E and OPNAVINST 5450.46G, respectively. These documents were compared to the desired policies at two levels. The first level of comparison was at the policy source and the documents were evaluated by use of the content analysis technique. The second level of

comparison was at the implementation level. At the implementation level the author reviewed the minimum training requirements as outlined in CCBINST 1500.20E and the current and projected NCF major project tasking list and compared these with the war mission related policies.

B. CONCLUSION

Based on the evaluations conducted at the source and working levels, the author concluded that current training and construction tasking policies are generally congruent with the war mission. The general findings were that all but one of the current policies expressed in the policy documents and the construction tasking summary are consistent with the war mission. The only exception was in the area of cross-rate training in which case the policy contained in CCBINST 1500.20E appeared to be self-contradicting. All other discrepancies surfaced as problems of ommission as opposed to specified policies being inappropriate. The most notable deficiency in training policy is a lack of training with supported commands in realistic OPLAN scenario exercises. Directly related to the lack of conducting realistic training exercises are deficiencies of not deploying routinely to probable contingency sites and a lack of specific training guidance relative to exercising the CCC function. The final deficiency could also be addressed in the context of a training exercise; that is, exercising the damage assessment function.

Noted discrepencies in construction tasking policies were all attributable to ommission, that is, desired policies were not identified in the policy document. At the policy source level OPNAVINST 5450.46G neglected to account for policies requiring exercising the assessment function,

operating in an NBC contaminated environment and preparedness for the defensive military role. The current and planned NCF major projects did not appear to emphasize OPLAN related type construction nor do they provide for exercising the damage assessment function. Neither of these policies can be easily accommodated via peacetime construction. One logical alternative would be to conduct well structured and realistic exercises to enhance NCF skills in each of these areas.

C. RECOMMENDATIONS

The possible results from this analysis were restricted by the breadth of the evaluation and the level of detail at which it was performed. This was by design. The author intended to retain a generalized perspective. Never-the-less, relevant conclusions have resulted from the process. Based on these conclusions the major apparent shortcoming in both training and peacetime construction tasking policies is their neglect to place emphais on participating in realistic OPLAN scenario exercises on a routine basis. Although current policies provide readiness training in many relevant areas, they neglect to exercise some of the most important functions. Just as the Marine Amphibious Force learns through repeated amphibious landings, so should NCF units exercise routinely in realistic scenarios and when possible, at actual contingency sites. Well organized realistic exercises would provide the opportunity to enhance CCC capabilities at all organizational levels. They could serve as a vehicle for drilling in damage assessment, NBC operations and defensive military tactics. Routine participation in readiness exercises should be encouraged for all NCF units.

Cross-rate training provides a unit increased flexibility. During past conflicts NCF units have often resorted to dispatching small highly specialized units to perform specific jobs. The existence of cross-rate trained personnel provides the unit commander a greater degree of flexibility in selecting detachment personnel. In the early days of a contingency, NCF units must be prepared to respond and adapt to a variety of situations. In situations where the need exceeds battalion resources in a particular skill or rate (e.g., revetment construction) the existence of cross-rate trained individuals could mitigate the inpact of overall manpower shortages. In light of the advantages associated with having cross-rate trained individuals in a unit, it is recommended that cross-rate training be more strongly encouraged.

D. RECOMMENDED FURTHER STUDIES

The current study sought to assess the congruency between training and peacetime construction tasking in general terms. While this may have placed limits on the possible results, it provides a good foundation for followup studies. Recommendations a and b below suggest that future evaluations examine other factors which are expressions of NCF policies. These relate to policy as it is reflected in resource allocation. One of the critical mission parameters identified in the analysis is the anticipated shortage of manpower in the early days of a war. Recommendation c suggests that the potential for using civilian contractors to augment military personnel be further explored. Reference [5] sets the minimum training requirements which serve as standards against which battalion skill readiness is compared. A study of the type recommended in d below

should provide further insights into the appropriateness of the current training requirements and could suggest ways for improving the NCF readiness reporting system. The following are recommended for further studies:

a) Examine major OPLANs and other available data and assess the appropriateness of 1) the quantity of minumum required skills, 2) the battalion rate structure and 3) the apportionment of training versus construction time.

b) Examine NCF policy as it is expressed in the distribution of budget dollars.

c) Explore the potential for using civilian contractors in future contingencies.

d) Examine the appropriateness of a readiness evaluation system similar to the Marine Corps Readiness Evaluation System (MCRES) for NCF use.

LIST OF REFERENCES

1. Thompson, A.A. Jr. and A.J. Strickland, III, Strategy and Policy, Concepts and Cases, Business Publications, Inc., Dallas, 1978.

2. Department of the Navy, Naval Facilities Engineering Command, P-315, Naval Construction Force Manual, February 1978.

3. Department of the Navy, Naval Facilities Engineering Command, Seabee Construction and Technology (SCAT), System Defintion Paper; 1981.

4. Department of the Navy, Cheif of Naval Operations Instruction 3501.115A, Projected Operational Environment (POE) and Required Operational Capabilities (ROC) statements for Naval Construction Force (NCF), 3 October 1978.

5. Department of the Navy, Commander, Naval Construction Battalions Pacific/ Commander, Naval Construction Battalions Atlantic/ Commander Reserve Naval Construction Battalions Instruction 1500.20E, Naval Mobile Construction Battalion Skill/Training Requirements Program, 27 August 1982.

6. Department of the Navy, Chief of Naval Operations Instruction 5450.46G U.S. Naval Mobile Construction Battalions (NMCBs); doctrine and policy governing, 4 December 1975.

7. Department of the Navy, Naval Training Command, NAVTRA 10479, Seabee Combat Handbook, 1972.

8. Tregaskis,Richard, Southeast Asia: Building the Bases, U.S. Government Printing Office Washington D.C., 1975.

9. Anthony,Robert N., Planning and Control Systems, A Framework for Analysis, Divisionof Research Graduate School of Business Administration Harvard University, Boston, 1965.

10. March, J.G. and H.A. Simon, Organizations John Wiley & Sons, Inc., New York, 1958.

11. Schuyler,Robert L., The Constitution of the United States, Peter Smith, New York, 1952.

12. Lindblom,Charles E., "The Science of 'Muddling Through'", Public Administration Review, vol. 19, (Spring 1959), pp. 79-88.

13. Leloup,Lance T., Budgetary Politics, King's Court Communications, Inc., Brunswick, Ohio, 1980.

14. Department of the Navy, Naval Postgraduate School, Practical Comptollership Manual, Monterey, CA, 1983.

15. Department of the Navy, United States Navy Regulations, U.S. Government Printing Office Washington D.C., 1973.

16. Department of the Navy, Cheif of Naval Technical Training Instruction 5450.25A, Mission and Functions Assigned to Naval Construction Training Center, Port Hueneme, 12 February 1976.

17. Coston, V.R. and B.L. Jackson, An Analysis of Group VIII Training, M.S. Thesis, Naval Postgraduate School, Monterey, CA, June 1976.

18. Department of the Navy, Naval Facilities Engineering Command, P-458, Personnel Readiness Capability Program, Vol. I, II, & III, January 1981.

19. Stuffelbeam, D.L., W.J. Foley, W.J. Gephart, E.G. Guba, R.L. Hammond, H.O. Merriman and M.M. Provus, Educational Evaluation and Decision Making, F.E. Peacock Publishers, Itasca, 1971.

20. Furst, E.J., Constructing Evaluation Instruments, David McKay Co. Inc., New York, 1964, in Stuffelbeam et. al.

21. Gerbner, G., Ole R. Holsti, Klaus Krippendorf, William J. Paisley and Philip J. Stone, The Analysis of Communication Content, John Wiley & Sons, Inc., New York, 1969.

22. Berelson, Bernard, Content Analysis in Communication Research, American Book - Stratford Press, Inc., New York, 1952.

23. Cartwright, Dorwin P., Analysis of Qualitative Material, in Leon Festinger and Daniel Katz editors, Research Methods in the Behavioral Sciences, Holt, Rinehart and Winston, New York, December 1966.

24. Rapoport, Anatol, A System - Theoretic View of Content Analysis, in Gerbner et.al.

APPENDIX A

BRIEF HISTORY OF THE NAVAL CONSTRUCTION FORCE

The forerunners of the United States Navy Seabees date back to the ancient Phonecians who employed seamen of the fleet to build shorebased facilities. American seamen were employed in large numbers for major construction during the war of 1812. But skilled Navy craftsmen were not again employed in large numbers for naval shore construction until the First World War when in 1917 the Twelfth Regiment (Public Works) was crganized at the Naval Training Station, Great Lakes, Illinois.

With the entry of the United States into World War I in April 1917, an immediate requirement was established at Great Lakes for facilities to house, process, and train 20,000 naval recruits. The requirement expanded rapidly and by the end of 1917 the need had increased to 50,000 recruits.

Although most of the major construction was to be accomplished by civilian contractors, the newly appointed Public Works Officer foresaw that the department would have to be expanded. Skilled craftsmen, architects, draftsmen, designers, and other professional and technical people were needed. Personnel requirements were satisfied by recruiting qualified civilians who were willing to join the Navy as Petty Officers as a patriotic duty. The initial 600 men were formed into the Twelfth Regiment which functioned as a training as well as a working organization.

Source: adopted frcm Department of the Navy, Naval Facilities Engineering Command, P-315, Naval Construction Force Manual, February 1978.

The Twelfth Regiment (Public Works) drew the plans for the Great Lakes wartime expansion and supervised all construction whether done by civilian contractors or by navy enlisted men. It maintained buildings, grounds, roads and railways and operated the power house, heating system, water supply and sewage disposal. It also operated carpenter, machine and paint shops.

By 30 December 1917, the Regiment became "fully operational" with 1,500 men organized into three battalions. Throughout the latter part of 1917 and all of 1918 men were withdrawn from the Regiment for assignment in the U.S. and abroad. Along with the more routine construction work, specialized teams were trained and employed in such works as assembly of the Naval Railway Batteries in St. Nazaire, France; the building and rehabilitating of docks and wharves, laying railroad tracks, and building communications facilities throughout Europe.

The Regiment peaked in strength on November 5, 1918 at which time it's compliment consisted of 55 officers and 6,211 enlistedmen, formed into eleven battalions. With the end of World War I in November 1918, training and construction operations at Great Lakes ceased and the Regiment faded away by the end of 1918.

Although the Twelfth Regiment (Public Works) had dissolved during the demobilization which followed World War I, the idea of Navy constructionmen was not erased from the minds of many Navy Civil Engineers. During the early 1930's planners at the Bureau of Yards and Docks (the predecessor of today's Naval Facilities Engineering Command) began providing for "Navy Construction Battalions" in the bureau's contingency war plans. The concept was to receive general acceptance by the War Plans Board and adopted for inclusion in the national Rainbow war plans that were developed in the last half of the 1930's.

When the United States went to war following the Japanese attack on Pearl Habor, large naval bases were under construction in Guam, Midway, Pearl Harbor, Iceland, Newfounland, Bermuda and many other places throughout the world. The continued use of civilian labor in war zones became impractical. Under international law civilian resistance to enemy attack was punishable by summary execution. The need for militarized Naval Construction Forces became self-evident. Pressured by the rapidly developing war situation, Rear Admiral Ben Moreell, Cheif of the Bureau of Yards and Docks, requesetd and received authority to activate, organize and man construction battalions. This is the actual beginning of the Seabees who obtained their designation frcm a transliteration of the initial letters of Construction Battalicn.

The first Seabees were not raw recruits but men who had helped to build Boulder Dam, the national highways, and skyscrapers. Men who had worked in mines and quarries and had worked in shipyards and built docks, warfs and even aircraft carriers. By the end of the war 325,000 such men had enlisted in the NCF and had supplied some 60 different skills to the war effort. At the Naval Construction Training Centers these men were taught military discipline and the use of small arms. Some of the first battalions were sent overseas immediately upon completion of boot training because of the urgent need for naval construction.

The construction battalion became the fundamental unit of the Seabee organization. Numbering approximately 32 officers and 1,073 enlistedmen, these battalions were composed of four construction companies plus a headquarters company which prcvided support functions such as medical, dental and administrative support. It was realized that the efficient employment of construction units would require a deviation

from the standard battalion. Special battalions comprised of stevedores and longshoremen helped to break the bottleneck in unloading ships in the combat zones, while Construction Battalion Maintenance Units were organized to take over the maintenance of bases. Special detachments ranging in size from 6-600 men were formed to do everything from operating tire repair shops to operating dredges.

In the Southwest Pacific Seabees constructed fuel tank farms, airfields, supply depots, and other facilities for supporting actions in the Coral Sea and Solomon Islands. Then, side-by-side with Marine and Army troops, they fought and built in the Pacific, North Africa, Italy, France and Germany. Seabee accomplishments in the Pacific theater include building 111 major airstrips, 441 piers, 2,558 ammunition magazines, 700 square blocks of warehouses, hospitals for 70,000 patients, tanks for storing 100,000,000 gallons of gasoline and housing for 1,500,000 men. At Tinian alone, Seabees placed 6,000,000 square yards of asphalt paving and excavated 12,000,000 cubic yards of coral; enough to pave a road from New York to Boston and sufficient coral to construct three dams the size of Hoover Dam, respectively, in a period of nine months.

Following the war a rapid, general demobilization saw NCF strength decrease significantly. Just before Korea the number of active duty Seabees approximated 2,800. But, the existence of a Seabee Reserve enabled a rapid mobilization for the Korea emergency.

At Inchon Seabees positioned pontoon causeways in support of the amphibious landing. As the war continued Seabees were employed to construct advance airfields to retrieve damaged aircraft unable to reach home bases or carriers and they performed various other fleet support projects. The demobilization which followed World War II was not repeated

after Korea. Crises in Berlin, Cuba, Africa, and South America and Sotheast Asia kept the NCF strong and active.

Between Korea and Vietnam the NCF made some impressive acheivements in peacetime construction. In Okinawa, they built a Marine Corps Air Facility using precast concrete, at Holy Loch, Scotland, Seabees assembled a floating drydock for the Polaris submarine facility, and in Antartica a group of Seabees installed the first Nuclear Reactor Power Plant at McMurdo Station. But by far the largest and most impressive peacetime project was the construction of Cubi Point Naval Air Station in the Philippines. At Cubi, Seabees cut a mountain in half, blasted coral and filled in a section of Subic Bay a mile wide and two miles long, constructing a 10,000 foot runway and a pier capable of docking the Navy's biggest carriers. During the same period Seabees were involved in building housing complexes, providing disaster relief and teaching construction skills to the people of underdeveloped countries throughout the world.

The first Seabee battalion arrived in Vietnam on May 7, 1965 to build an expeditionary airfield for the Marines at Chu Lai. Before the conflict was over, Seabee strength had swelled to 29,000 men and 21 construction battalions. Seabee accomplishments included building countless miles of roads, airfields, cantonments, warehouses, hospitals, storage facilities, bunkers and other facilities. NCF accomplishments in Vietnam were no less impressive then those of previous wars yet Viet Nam did present a unique construction situation. While Seabee and other military engineering units struggled with their tasking in the hostile zones, the majority of construction in Vietnam was performed by a gargantuan American civilian construction consortium. Jointly these civilian and military builders constructed six major ports with twenty nine berths, six

naval bases, eight permanent jet airfields, hospitals with 6,200 beds, 14 million square feet of covered storage, 1,600 miles of paved roads and housing for 450,000 Vietnamese servicemen and their dependents.

When deescalation of U.S. activity in Southeast Asia began, NCF strength was reduced in tandem. Once again Seabees turned to undertake major peacetime projects. One of the major peacetime projects ever undertaken by the NCF was started in 1973 and entailed the complete development, construction and operation of the British Indian Ocean Territory of Diego Garcia. Undertakings included erection of transmitting and receiving facilities, support facilities including berthing, messing and recreation facilities; a 12,000 foot runway which extends partially into a backfilled lagoon, a modern pier facility, a fuel storage farm and utilities, roads and support shops. In 1982 major battalion deployments to Diego Garcia were halted leaving the majority of the remaining construction to be performed by civilian contractors.

Currently eight Naval Mobile Construction Battalions are deploying to and performing construction at major sites on Guam, the Philippines, Okinawa, Spain, Puerto Rico and Sicily. Additionally, Seabee Teams and detachments are deploying to numerous other sites throughout the world.

Given the current global tensions and the reemphasis on military preparedness to respond to conventional conflicts, it is likely that the Seabees of today's Naval Construction Force will continue to face imposing challenges equal to or greater than those faced by their forerunners in the Second World War, Korea and in Southeast Asia.

APPENDIX B

PLANNING, PROGRAMMING AND BUDGETING SYSTEM (PPBS)

LESSON II: PLANNING, PROGRAMMING AND BUDGETING SYSTEM (PPBS)

A. BACKGROUND

The Planning, Programming and Budgeting System is simply a decision-making process for allocating defense resources. It takes almost two years and involves four major players at the Washington D.C. level (i.e., OMB, OSD, JCS, and the Services) who, through an iterative process move from broad planning considerations, to more definitive program objectives to finally specific budget estimates which price out the programs. Although the field comptroller may not be intimately or directly involved in this process, the annual budget call from the Major Claimant does link him to PPBS. It is therefore important for the Comptroller to be familiar with the PPBS process. For a more in-depth review of PPBS, the student should refer to the Department of the Navy Programming Manual (OPNAV 90P-1E) and attend courses offered in PPBS by OPNAV and NAVMAT in Washington D.C.

Planning, Programming, and Budgeting as a management system had its birth in the Department of Defense under then Secretary of Defense McNamara. In the simplest of terms, PPBS is a system designed to assist the Secretary of Defense in making choices about the allocation of resources among a number of competing or possible programs and alternatives to accomplish specific objectives in our national defense.

The Planning, Programming, and Budgeting System contrasts with the traditional budgeting process which preceded it in two significant ways. First, PPBS tends to focus less on the existing base and annual incremental improvements to it. Instead, its focus is more on objectives and purposes, and the long-term alternative means for achieving them. As a result of this emphasis, planning has been elevated to a level on par with budgetary management and control. Secondly, the system brings together planning and budgeting by means of programming, a process which essentially defines a procedure for distributing available resources equitably among the many competing or possible programs.

The Planning, Programming, and Budgeting System (PPBS) can be summarized in a few words. Based on the anticipated Threat, a Strategy is developed. Requirements of the strategy are then estimated and Programs are developed to package and execute the strategy. Finally the costs of approved programs are Budgeted in the sequence shown below in Figure A-4.

PPBS Sequence of Events

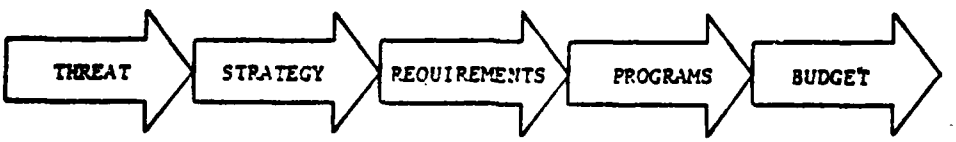


Figure A-4

Source: Department of the Navy, Naval Postgraduate School, Practical Comptrollership Manual, Monterey, CA, 1983.

B. THREE PHASES OF PPBS

The PPBS process is depicted in Figure A-5 and is described as follows:

1. Planning.

Planning, the first phase of the PPBS starts with the assessment of the threat to the security of the United States and, when combined with national policy, culminates in the development of force objectives to assure the security of the United States. In the context of the PPBS annual cycle, planning is initiated with the submission of the Joint Strategic Planning Document (JSPD) by the JCS and ends with the Secretary of Defense's issuance of the Defense Guidance which is the document providing guidance for preparation of the Program Objectives Memoranda. The JSPD provides the advice of the JCS to the President, the National Security Council, and the Secretary of Defense on the military strategy and force structure required to attain the national security objectives of the United States.

Planning, Programming and Budgeting System

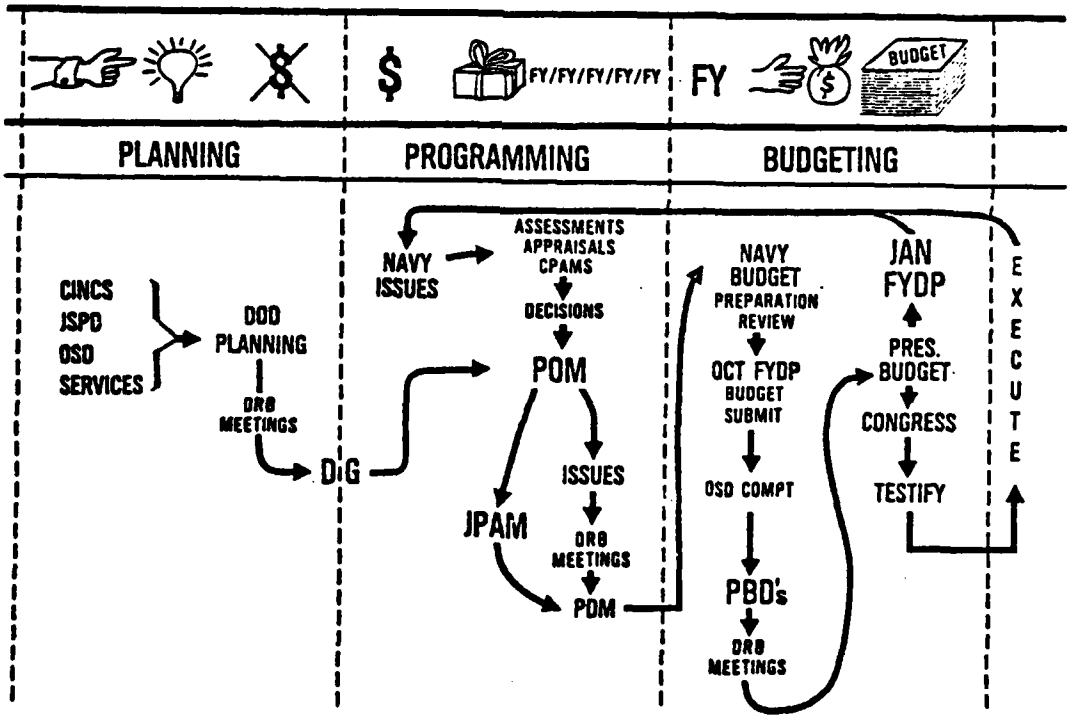


Figure A-5

2. Programming.

The basic purpose of the programming phase in PPBS is to translate the strategy into program force structures in terms of time-phased resources requirements including personnel, monies, and material. This is accomplished by systematic approval procedures that "cost out" force objectives for financial and manpower resources five years into the future.

The programming phase of the DoD PPBS cycle commences with the promulgation of the Defense Guidance. This document provides the guidelines that must be observed by the JCS, the Military Departments, and Defense Agencies, in the formulation of force structures and Five Year Defense Programs, and by the Secretary of Defense Staff in reviewing proposed programs, particularly with respect to fiscal constraints. This guidance is based upon the JSPD, as amended, to reflect decisions made by the President or those made by SECDEF. The purpose of the fiscal guidance is to specify the allocation of the resources available to the Departments of Defense. The fiscal guidance identifies specific TOA and/or outlay by fiscal year for each Military Department and Defense Agency.

The critical document during the Program Phase is the Program Objectives Memorandum (POM). POM's are prepared by each of the Services in response to the Defense Guidance from SECDEF. The purpose of a POM is to express total program requirements in terms of force structure, manpower, material and costs, to satisfy all assigned functions and responsibilities during the period of the Five Year Defense Program . The POM provides rationale for changes from the approved FYDP base and is the primary means of requesting revision to the SECDEF approved programs as published in the FYDP. Development of the Navy POM consists of three consecutive phases: Program Planning Phase, Program Data Base Update Phase, and Final POM Development (End-Game) Phase. These three phases are discussed in the following three paragraphs.

The Five Year Defense Program (FYDP) is the official summary of programs approved by the Secretary of Defense. The FYDP specifies force levels in terms of major mission programs. It also lists total obligational authority (TOA) by appropriation and manpower. For each category, it records totals by prior fiscal year, current fiscal year, budget year (the first year in the FYDP), and succeeding fiscal years known as outyears--seven outyears for force levels and four for TOA and manpower. The FYDP serves as the controlling internal working mechanism of the DoD Planning, Programming, and Budgeting System and periodically records its major outputs; proposed programs and program budget estimates.

The Program Planning Phase commences in early July and ends the following January. For example, the POM-85 Program Planning Phase started July 1982 and ended January 1983. The Secretary of the Navy issues the Department of the Navy Planning and Programming Guidance (DNPPG) which identifies areas requiring attention by the CNO, CMC and civilian executive assistants in the development of the POM. In early November OP-96 prepares the Net Assessment (a comparison of U.S./Allied Naval capabilities with those of potential adversaries) and the Preview CNO Program Analysis Memorandum (CPAM). Additional CPAM's are presented through January in the areas of Support and Logistics, Manpower, Personnel and Training, Fleet Support and Strategic Mobility, Tentative Program Summary, and Program Decision Summary.

Each CPAM addresses the Navy's capability to carry out its overall goals and objectives and identifies major issues requiring decision by the CNO Executive Board (CEB). Claimants are requested to submit issues of Navy-wide interest which address major resource allocation or policy issues to OP-96 during the summer months preceding the CPAM phase. Each CPAM is to be balanced fiscally at the level set in the CNO Program and Fiscal Guidance (CPFG) promulgated in mid-November. The Program planning phase concludes with the Tentative Program Summary which aggregates for CNO decision and prioritization, program issues and alternatives presented in each of the CPAM's and Naval Warfare Appraisals. A CPFG II and Initiative Program Decisions (TPD) are promulgated to document CNO decisions on the Tentative Program Summary. The Assessment Sponsors on the CNO Staff are as follows'

ASSESSMENT SPONSORS

Strategic	OF-06	General Support/Logistics	OP-04
Sea Control	OP-095	Fleet C^3	OP-094
Projection	OP-05/03	Intelligence	OP-009
Fleet Support	OP-03	Training	OP-099
Mobility Forces	OP-04	Personnel Support	OP-01

The Program Data Base Update Phase commences in February and continues until early April when the Program Decision Summary (PCS) is presented. Based upon guidance contained in the CPFG II/TPD, Resource Sponsors will update the program data base to reflect fiscal and manpower controls and tentative CNO program decisions. Major program changes are described and justified in Program Summary documents distributed by Resource Sponsors. During March Program Assessments are presented by OP-01, OP-04, OP-09R and OP-095 to the Program Development Review Committee (PDRC). The results of Program Assessments and major unresolved issues resulting from the PDRC reviews are presented in the Program Decision Summary (PDS) to the CNO for approval and resolution as appropriate. The Resource Sponsors on the CNO Staff are as follows;

RESOURCE SPONSORS

Platform Sponsors

Submarine	OP-02
Surface	OP-03
Aviation	OP-05

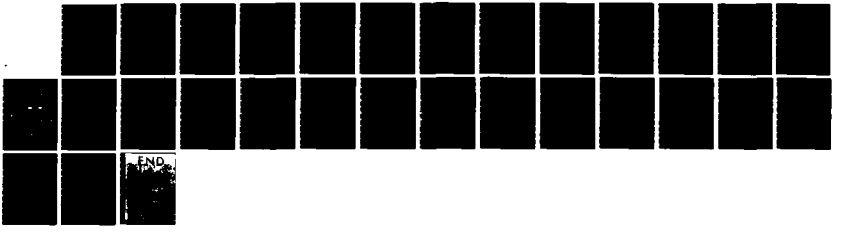
Support Sponsors

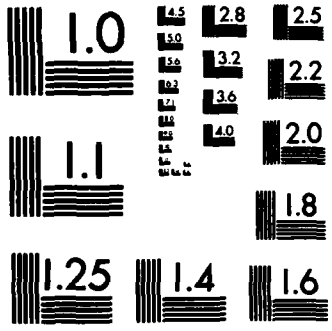
Manpower	OP-01	R&D	OP-098
Logistics	OP-04	C^3	OP-094
Ocean Surveillance	OP-095	Command/Administration	OP-09B
Training	OP-099	Military Assistance	OP-06

The final phase of POM development, the "End Game", takes place during April, and commences with the conclusion of the PDS. This phase consists of an iterative process involving program trade-offs to accommodate necessary repricing of procurement programs and the establishment of appropriations controls to enhance balance and budget feasibility. Additionally, at the end of the process, the presentation of the proposed programs are reviewed by a third group of Sponsors called Appropriation Sponsors. These individuals look at the

AD-A136 744 NAVAL CONSTRUCTION FORCE READINESS TRAINING PEACETIME CONSTRUCTION AND TH.. (U) NAVAL POSTGRADUATE SCHOOL MONTEREY CA W A DOS SANTOS SEP 83 2/2

UNCLASSIFIED F/G 5/1 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

program as it would be presented to DoD and advise what changes in packaging by appropriation could be made which would improve the likelihood of success at the Budget Table. The Appropriation Sponsors on the CNO Staff are as follows;

APPROPRIATION SPONSORS

SCN	OP-03	O&MN	OP-92
APN	OP-05	MPN	OP-01
OPN	OP-92	O&MNR	OP-09R
WPN	OP-03	MCNR	OP-09R
RDT&E	OP-098	RPN	OP-09R
MILCON	OP-04		

A number of organizations/offices have been assigned responsibility by SECDEF for development and submission of the Navy POM. They include: (1) Department of the Navy Program and Information Center (DONPIC), (2) Civilian Executive Assistants, (3) the Chief of Naval Operations and Commandant of the Marine Corps, (4) the Director, Office of Program Appraisal, and (5) the Comptroller of the Navy.

About thirty days after the Services publish their Program Objective Memoranda, the JCS issue the Joint Program Assessment Memorandum (JPAM). The JPAM gives the views of the Joint Chiefs on the adequacy of the composite force and resource levels presented in the Service POMs. The SECDEF considers the Joint Chiefs' analyses when deciding program issues during the summer issue cycle preceding final approval of Service POMs and the drafting of Program Decision Memorandum (PDM).

As a prelude to the promulgation of the Program Decision Memoranda, program issues related to force levels, system acquisition, and rates and levels of support are addressed by the OSD and Service Staffs in issue papers which are OSD analyses of annual POM submittals. SECDEF decisions resulting from this review process are promulgated in the Program Decision Memorandum. Major issues identified in the PDM are discussed by the Service Chiefs, Service Secretaries, and SECDEF.

3. Budgeting.

Budgeting is the final phase in the Planning, Programming, Budgeting cycle. The annual budget expresses the financial requirements necessary to support approved programs which were developed during the preceding phases of planning and programming. It is through the budget that planning and programming are translated into annual funding requirements.

Normally, the annual Budget Submission to the Secretary of Defense is made on 15 September, twelve months prior to the applicable fiscal year. The Navy COMPTROLLER issues the call for the submission of Budget Estimates in early June of each year prior to the budget submission to SECDEF on 15 September. NAVCOMPT instructions prescribe the content and format for budget estimates and promulgate the required budget relationship to the POM, the decision documents, and to the SECDEF Logistics/Fiscal guidance. After review and final decision, the Secretary of the Navy submits the proposed budget to SECDEF.

Budget Estimates are submitted to OSD for analyses. After the analyses, the SECDEF holds a series of budget hearings jointly with OMB on the DoD component requests. These hearings are used by SECDEF to formulate his Program Budget Decisions (PBD's). After OSD issues the annual PBD's, the Services and JCS provide comments on the DPSs to SECDEF. These comments received from the various components are used by OSD to revise the PBD's. At this point, the Budget Estimate is finalized, which after approval by the SECDEF is submitted to OMB for incorporation into the President's Budget.

PPBS is a dynamic process which has evolved over the past twenty years and is still changing. The Reagan Administration through Secretary of Defense Wineberger is moving the management style of PPBS toward controlled decentralization and the assignment of more responsibility to the Services, and less paperwork. Some actions which the Deputy SECDEF has directed, include the following: (1) Improve strategic planning in the early planning phase of PPBS; (2) add the Service Secretaries to the Defense Resource Board; (3) enhance the Services' responsibility for developing, defending and carrying out their programs;and (4) cut by almost fifty percent the POM documentation requirements.

It should be recognized that PPBS will be changed in accordance with the management style of new incumbents and with the varying demands of a changing world. Therefore, students who will work with the PPBS process should seek information in addition to that presented in this Lesson which is more timely and specific to their position. Figure A-6 provides an oversight into the interplay and timing involved in the PPBS process which may assist in conceptualizing this process.

PPBS Document Flow

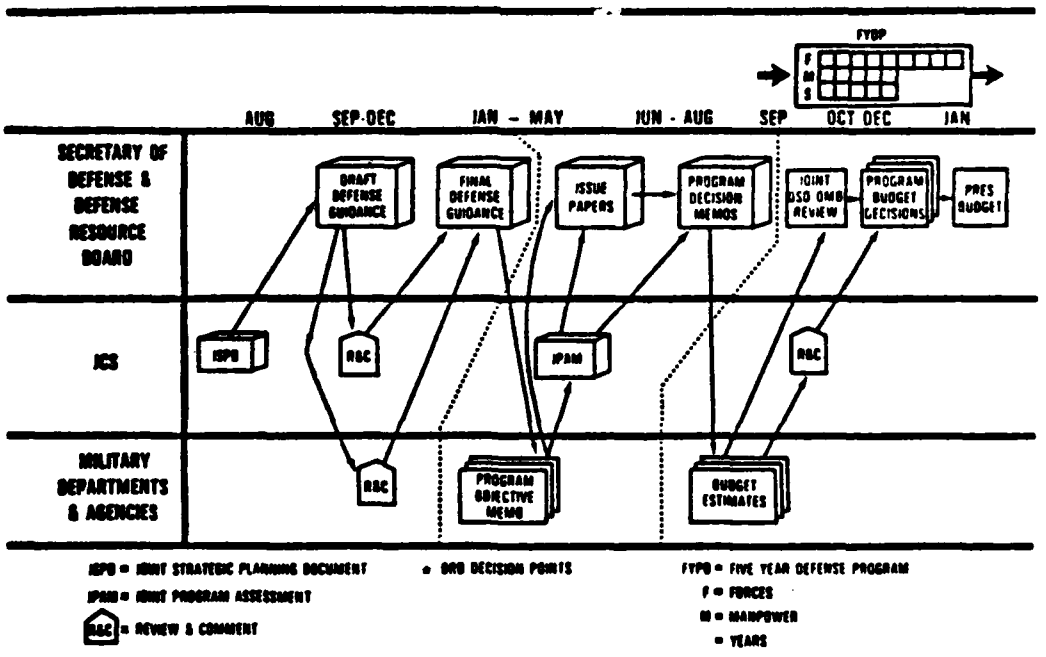


Figure A-6

In summary, the internal Navy PPBS process involves many players over the course of a year and results in the construction and update of a significant data base. The data base is retained in such a way as to be capable of providing numerous views of the Navy. A perspective on this multi-fauceted capability is depicted below in figure A-7.

WAYS TO SLICE THE NAVY PIE

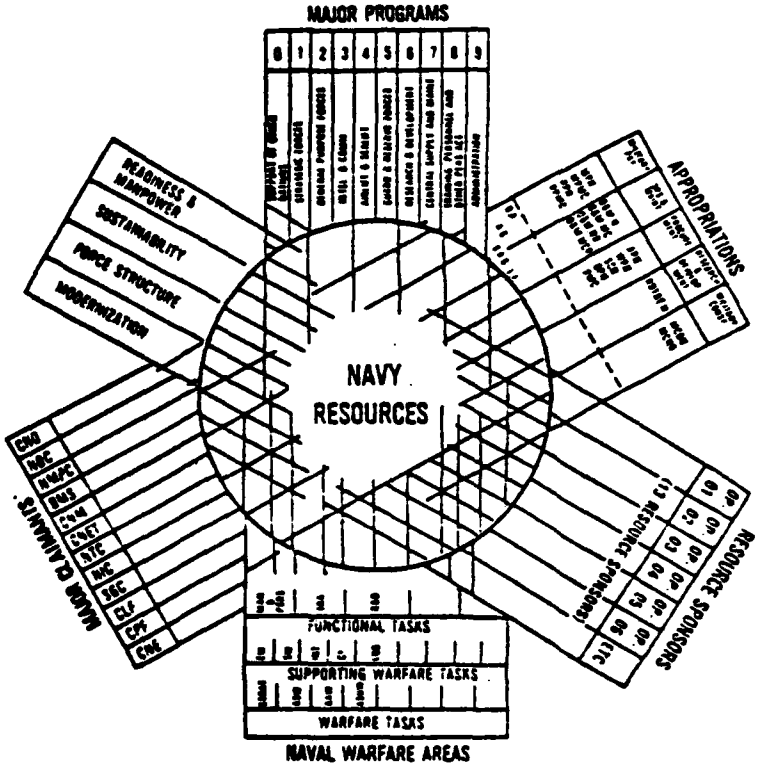


Figure A-7

APPENDIX C

NMCB SKILL TRAINING REQUIREMENTS

BUILDER

SKILL TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Planning and Estimating	4	3	0
Tool and Equipment Maintenance	5	2	0
Woodworking and Millworking	20	2	NA
Concrete Forming and Reinforcing	42	21	NA
Mixing/Placing/Finishing Concrete	42	21	6
Masonry Unit Construction	42	21	8
Light Frame Construction	42	21	NA
Roofing	9	NA	NA
Finish Carpentry	20	9	NA
Plastering	24	NA	NA
Ceramic Tile Setting	9	NA	NA
Heavy Construction	24	12	8
Painting and Preservation	33	20	8
Glazing	10		NA

Source:COMCBPAC/COMCBLANT/COMRNCF Instruction 1500.20E, Naval Mobile Construction Battalion Skill/Training Requirements Program, 1982

CONSTRUCTION MECHANIC

SKILL TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Engine Overhaul	13	7	NA
Engine Tune-up (gasoline)	13	7	NA
Engine tune-up (diesel)	13	7	3
Equipment Electrical	18	9	5
Equipment Power Train	9	7	4
Equipment Chassis	17	7	4
Cost Control	3	1	0
Repair Parts Storeman	3	1	0
Radiator Repairing	0	NA	NA

ENGINEERING AID

SKILL TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Applied Engineering Mathematics	8	2	NA
Planning and Estimating	3	1	NA
Surveying	5	1	NA
Drafting	5	1	NA
Soils and Pavement Analyst	4	2	NA

EQUIPMENT OPERATOR

TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Planning and Estimating	3	1	0
Truck/Tractor and Trailer Operation	33	8	NA
Transit Mixer Operation	18	NA	NA
Wrecker Operation (tactical)	5	NA	NA
Asphalt Plant Operation	6	2	NA
Asphalt Distributor Operation	5	NA	NA
Crushing and Screening Operations	4	NA	NA
Soil Stabilization	6	3	NA
Water Well Drilling	8	5	NA
Power Earth Auger	5	NA	NA
Rock Drill Operation	6	NA	NA
Crane and Attachments	12	7	0
Scraper Operation	16	10	NA
Grader Operation	10	7	NA
Crawler Tractor and Attachments	25	8	NA
Ditcher Operation	6	NA	NA
Front-End Loader and Attachments	25	8	NA
Blasting and Quarry Operations	4	NA	NA
Driver's License Examining and Accident Investigation	4	NA	NA
Asphalt Paving Machine Operations	8	4	NA
Cone Type Crusher/Screening Ops	0	NA	NA

STEELWORKER

SKILL TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Planning and Estimating	3	1	0
Arc Welding (structural)	16	8	NA
Arc Welding (pipe)	5	NA	NA
Gas Cutting and Welding	16	8	NA
Shielded Inert-Gas Arc Welding	5	2	NA
Maintenance Welder	4	NA	NA
Sheetmetal Work	12	4	NA
Steel Reinforcing	16	6	NA
Rigging	5	2	NA
Steel Erection	13	NA	NA
Body Repairing and Refinishing	0	NA	NA

UTILITIESMAN

SKILL TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Planning and Estimating	3	1	0
Plumbing	16	6	NA
Shore-Based Boilers	6	2	3
Pumps and Compressors	12	4	NA
Water Treatment	8	4	2
Sewage Disposal and Field Sanitation	6	1	NA
Air Conditioning and Refrigeration	6	4	1

CONSTRUCTION ELECTRICIAN

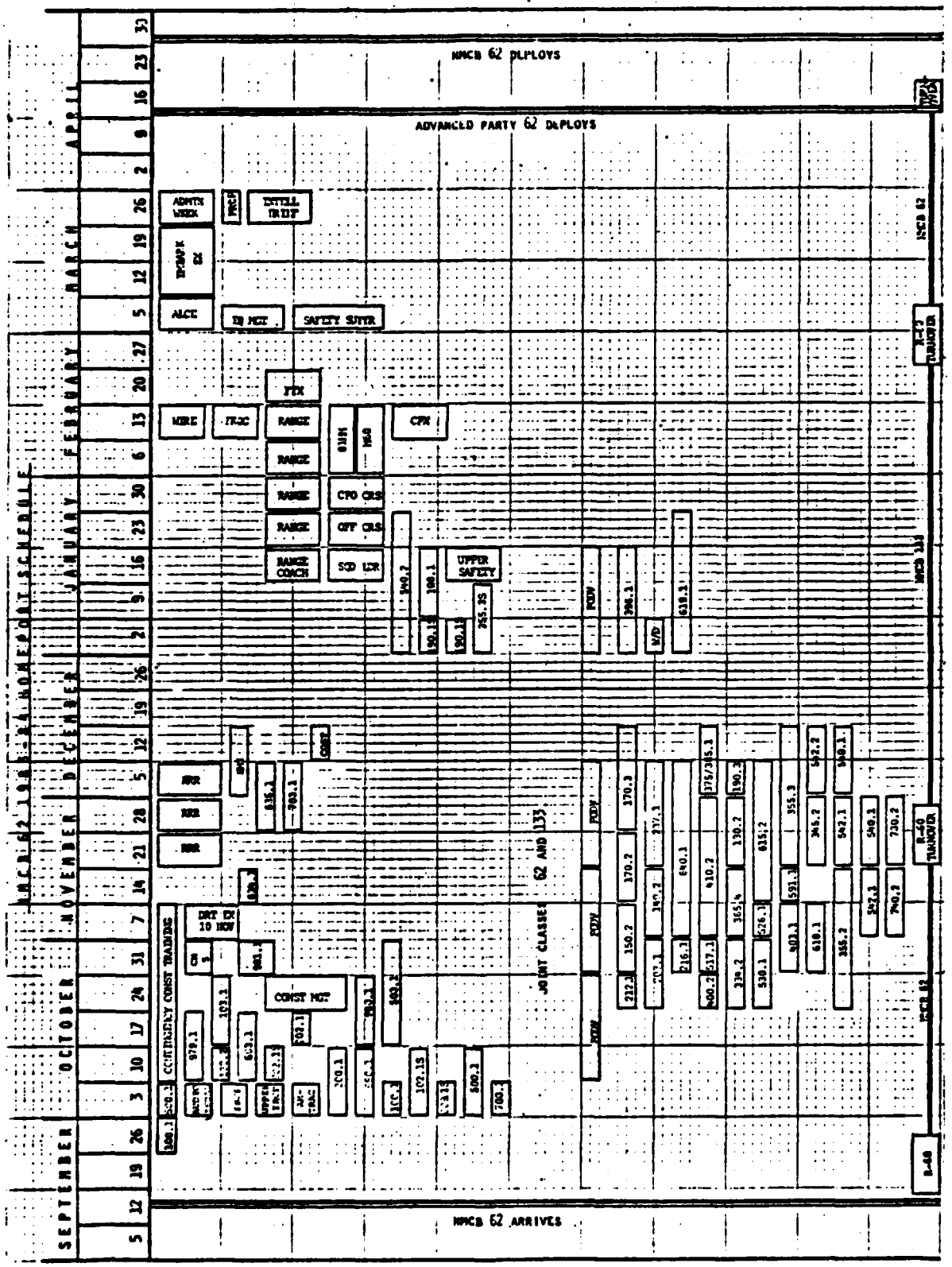
SKILL TITLE	SKILL LEVEL 1	SKILL LEVEL 2	SKILL LEVEL 3
Planning and Estimating	6	1	0
Advanced-Based Power Plant Tech	11	6	3
Electric Motors and Controls	11	6	0
Electric Power Distribution Systems	15	4	0
Telephone Exchange/Distribution Syst	6	3	NA
Inter-Office/Public Address System	3	NA	NA
Cable Splicing	6	4	NA
Interior Wiring	20	6	NA
Motor and Generator Rewinding	2	NA	NA
Solid State Fundamentals	0	NA	NA
Line Const/Maint Vehicle Oeration	0	NA	NA

CREW SKILLS

SKILL TITLE	CREW SIZE	CREWS REQUIRED
Tent Camp/Cantonment	6	2
Pre-engineered Metal Structures	8	2
Timber Bridge	8	1
Steel Bridge	8	1
Steel Tank Erection	6	1
Steel Tower	8	1
Airfield Matting Layout	8	2
Bunker Construction	6	1
Fire Fighting	6	1

APPENDIX D

ACTUAL NMCB HOMEPORT TRAINING SCHEDULE



APPENDIX E

NAVFAC ANALYSIS OF 2-1/2 YEAR EMPLOYMENT PLAN

Workload Analysis of 2-1/2 Year Employment Plan

Attachment A: FY 83 - 85 Statistical Summary

Attachment B: FY 83 - 85 Operational/Repair Workload Summary

Attachment C: Workload Summary Analysis Graph

Attachment D: Major Projects by Main Body and Detachment Site

Attachment E: Underwater Construction Team Employment

Attachment F: Pride and Professionalism Summary

Source: Commander, Naval Facilities Engineering Command, Alexandria, Virginia

FY 83-85 NCF EMPLOYMENT PLAN STATISTICAL SUMMARY

FY	SITE	OPR M/D %*	HSG M/D %*	COMM M/D %*	TOTAL M/D	REPAIR M/D %*
FY 83	GUAM (W/DG DET)	13575 (53%)	9315 (37%)	2495 (10%)	25385	15235 (60%)
	OKINAWA	34560 (75%)	4017 (9%)	7166 (16%)	45743	19213 (42%)
	ROTA	22670 (70%)	2585 (8%)	7115 (22%)	32370	8080 (25%)
	ROOSEVELT ROADS	15230 (59%)	2225 (9%)	8320 (32%)	25775	6610 (26%)
	FY 83 TOTAL	86035 (67%)	18142 (14%)	25096 (19%)	129273	49138 (38%)
FY 84	GUAM	40800 (63%)	22360 (35%)	1020 (9%)	64180	39915 (62%)
	OKINAWA	51057 (84%)	4393 (7%)	5579 (9%)	61029	33680 (55%)
	ROTA	54420 (81%)	700 (1%)	12441 (18%)	67561	18965 (28%)
	ROOSEVELT ROADS	38235 (73%)	6160 (12%)	7980 (15%)	52375	15700 (30%)
	FY-84 TOTAL	184512 (75%)	33613 (14%)	27020 (11%)	245145	108260 (44%)
FY 85	GUAM	40968 (93%)	1350 (3%)	1652 (4%)	43970	13470 (31%)
	OKINAWA	16985 (75%)	3400 (15%)	2257 (10%)	22642	7119 (31%)
	ROTA	35121 (73%)	0 (0%)	13135 (27%)	48256	7670 (16%)
	ROOSEVELT ROADS	35280 70%)	3860 (8%)	11310 (22%)	50450	19640 (39%)
	FY-85 TOTAL	128354 (78%)	8610 (5%)	28354 (17%)	165318	47899 (29%)
GRAND TOTAL (FY-83 to FY 85)		398901 (74%)	60365 (11%)	80470 (15%)	539736	205297 (38%)

OPERATIONAL/REPAIR WORKLOAD SUMMARY FY 83-85 NCF EMPLOYMENT PLAN

	ROTA	ROOS RDS	GUAM	OKINAWA	NCF TOTAL
OPR M/Ds (% TOTAL)	112,211 (76%)	88,745 (69%)	95,343 (71%)	102,602 (79%)	398,901 (74%)
RPR M/Ds (% TOTAL)	34,715 (23%)	41,950 (33%)	68,620 (51%)	60,012 (46%)	205,297 (38%)
TOTAL M/Ds	148,187	128,600	133,535	129,414	539,736

ROTA

- % of operationally related projects has increased (6%) since last years projection.
- % of repair projects has increased (9%) since last years projection.

ROOS RDS

- % of operationally related projects has decreased (9%) since last years projection.
- % of repair projects has decreased slightly (1%) since last years projection.

GUAM

- % of operationally related projects has decreased (7%) since last years projection.
- % of repair projects has decreased (16%) since last years projection.

OKINAWA

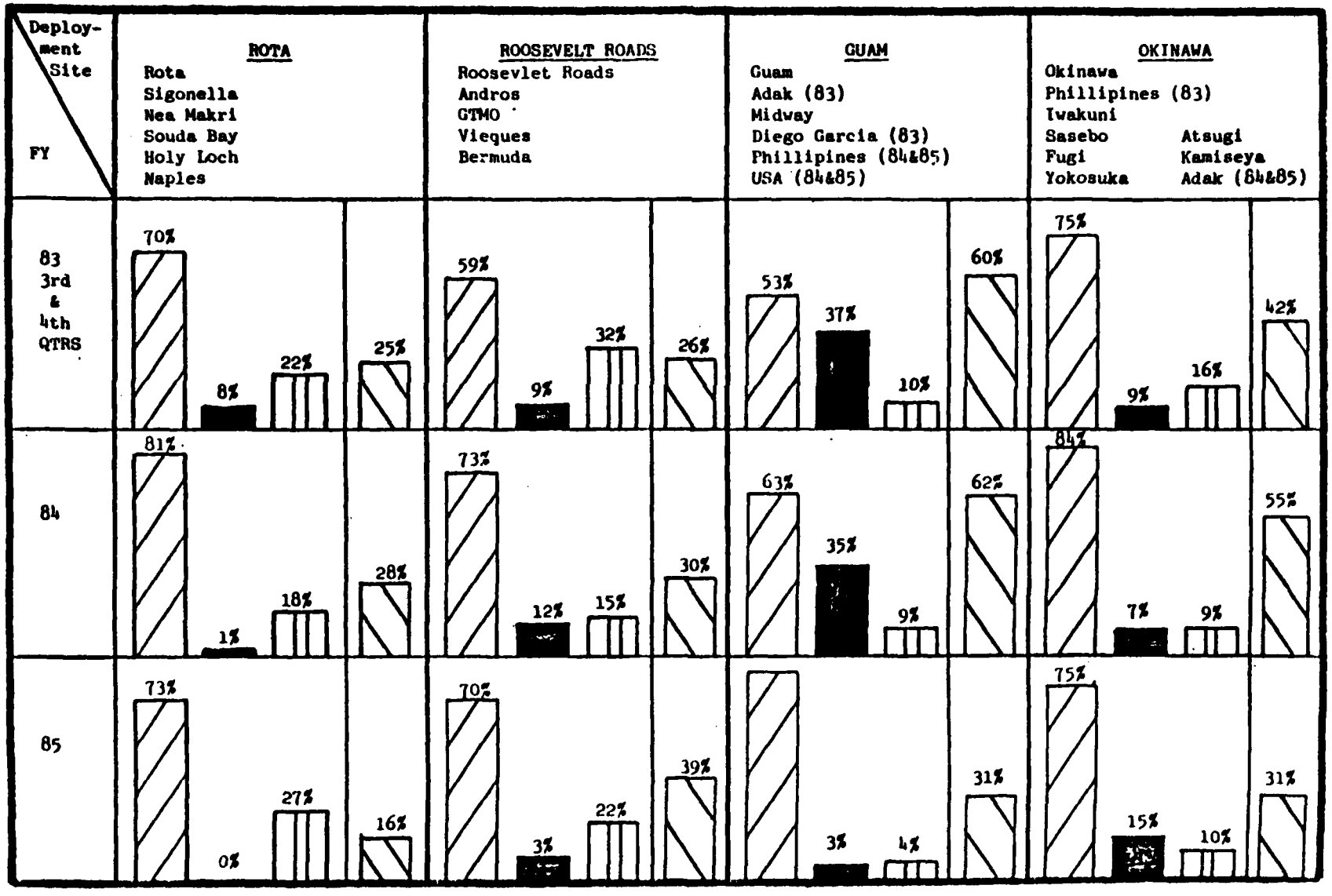
- % of operationally related projects has decreased slightly (2%)since last years projection.
- % of repair projects has decreased slightly (1%) since last years projection.

NCF TOTAL

- % of operationally related projects has remained steady at 74% since last years projection.
- % of repair projects has increased slightly (1%) since last years projection.

WORKLOAD SUMMARY ANALYSIS

Operational | Housing | Community | Repair



MAJOR PROJECTS GUAM BATTALION

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000)
GUAM					
	13B	Repair Roads SASA Valley	1600	3	237
	23A				
	53C	Repairs to UEPH's (Total of 16 Bldgs.)	21600	3	1048
	55A	Repair Roads Pnase III	3350	3	660
	59B	SASA Valley Road Repair	1300	3	154
	61B	Emerg & OVHD Lighting UEPH's	1200	1	42
	71A	Upgrade/Repair Road Intersections	1680	3	116
	75B	Repair Bldg. 2054	1250	3	47
	103D	Classified	2500	1	300
	131E	Repair Pipeline Road	2300	3	498
	165C	Repair Preserved Equipment Warehouse	1200	3	UNK
DIEGO GARCIA					
	171A	Satellite Dining Facility	2750	1	385
	173A	Construct Dog Kennel	1375	1	130
	177A	Construct Jet Blast Shields	1375	1	1209
MIDWAY					
	319A	Repair Sheet Pile Bulkheads	9480	3	5090
PHILLIPINES (GUAM)					
	225B	Const Handball Courts	1500	1	40
	233B	Const Ground Elect Shop	1000	1	36
	235B	RPL 12" and 8" Slop Lines	4000	2	325
	241A	Repair Causeway	1200	2	152
	249A	Phase II Repair Magazine Roads	3000	3	384
	257B	Repair UEPH 305	1200	3	91
	259B	Repair UEPH 307	1200	3	85
	261B	Repair UEPH 308	1200	3	91
	263B	Repair UEPH 309	1200	3	91
	279B	Const NSWU-1 Workshed	1500	1	54
	301E	Const Shed	1200	1	47
	303E	Const Small Boat Repair Bldg.	1200	1	82
	309E	Replace Hardstand Shed 2631	1200	2	47
	311E	Replace Hardstand Shed 2628	1500	2	88
	313E	Replace Hardstand Shed 2629	1200	2	77
	315E	Replace Hardstand Shed 2630	1200	2	77
	317E	Replace Hardstand Shed 2248	1200	2	38

ATTACHMENT (D)

MAJOR PROJECTS GUAM BATTALION (CONT.)

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000)
USA (WEST COAST/HAWAII)					
	197D	RPR/RPL Boundary Fence	1500	3	270
	199D	Alt/Bldg. M-273	980	2	65
	203B	Demo of Misc. Structures	1280	1	10
	215C	Demo of Water Tank	1520	1	12
	217C	Demo Water Tank E-11	1520	1	12

MAJOR PROJECTS OKINAWA BATTALION

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000)
OKINAWA					
	4A	RPR Electrical Lines and Poles	1200	3	102
	6A	Replace Bldg. TE-1	1365	2	206
	10A	Const Medical Dental Facility	3500	1	122
	20A	RPR Track and Football Facility	1700	3	357
	34A	Const GSE Flammable Storage	1200	1	67
	44A	Repair Taxi Way	7400	3	1900
	46A	Repair Roof and Structure Bldg. 208	2000	3	160
	50B	Alts to Recreation Field	1300	3	26
	52A	Structure Mech RPRS Bldg. T-350	2000	2	372
	54A	RPR Bldg. T-514 Builder	1200	3	43
	58A	Relocate 3RD Recon Battalion	1400	1	280
	68A	RPL Elect Distr Sys White Beacn	1500	3	444
	96A	Overlay Asphalt Areas	1250	4	189
	118B	Const 5 Recreation Pavilions	1588	1	254
SASEBO					
	148A	Repair Fire Line-Akasaki	3000	3	948
	150A	Repair UEPH 47	1500	3	106
	152A	Repair Steam Distr. Sys.	2400	3	196
	154A	Repair UEPH 50	1200	3	90
	156A	Repair Maebata Elect Distr.	1500	3	95
	162A	Repair UEPH 46	2500	3	129
	164A	Exterior Repairs Bldg. 1209	1900	3	65
	166B	Repair UEPH 43	1500	3	126
YOKOSUKA					
	214A	Const Food Inspect Facility	950	1	48
	216A	RPR Windows & Doors Bldg. G-5	900	3	106
	224A	RPR Seawall & Jetty G-Area	900	3	83
	236A	Relocate Comp/Supply Off A-40	1200	1	135
ATSUGI					
	238A	RPL Floors UEPH 47 & 50	900	3	39
KAMISEYA					
	242A	Const GYM Locker Room	1000	1	18
FUJI					
	252B	Const 4000 SF Warehouse	1250	1	200
	254B	Install Security Fence	1470	1	380

MAJOR PROJECTS OKINAWA BATTALION (CONT.)

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000)
IWAKUNI					
	172A	Const MAG GSE Storage Area	1400	2	99
	184A	Pollution Equip Storage	1070	1	96
	186A	Const Hazard Waste Storage	1200	1	75
	188A	Const PEB Central Warehouse	1300	2	61
	192A	Improvements to Chapel	2000	2	161
	194A	Cover Ditch North R/W	1500	2	99
	200B	Const 2 ea 2380 BBL Mogas Tanks	3000	2	200
	202B	Const Concrete, POL Drum Storage	2500	1	200
	204B	Const Defuel Tank (2000 BBL)	1500	1	130
	206B	Const POL OPS Bldg.	1000	1	164
	208B	Install 4" Steamline	2400	1	80
	210B	RPL Roof and Light SYS	1500	3	60
	212B	Const Vehicle Maint Shop	1800	1	440
ADAK					
	120A	RPR Station Roads	11850	3	909

MAJOR PROJECTS ROOS RDS BATTALION

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000)
ROOS RDS					
	1A	Crusher/Quarry OPS	3470	1	N/A
	2A	Maint/Repair Seabee Camp	13750	4	N/A
	7A	Repair/Improve Theater	3000	2	210
	41B	RPR Drainage SYS	990	3	219
	50B	Const Hyperbaric/Recomp Bldg.	1000	1	60
	58B	Operational Storage Bldg.	1090	1	94
	59B	Repl Bravo Co Shops	2060	1	89
	66B	Alter/RPR Secondary Roads	1015	3	94
	73B	Const Communication Bldg.	1055	1	118
	81B	RPR/Improve UEPH 733	1880	3	173
	89C	RPR Marina Pier	2000	3	204
	90C	Const Bldg., NSWG Two	1200	1	130
	91C	Alt/RPR Waterline Industrial STP	1700	3	253
	113C	Const Ctr/Csr Addition	1200	1	50
	151B	Demo. of Abandoned Bldgs.	1300	3	40
GUANTANAMO BAY					
	11A	RPR Transportation Facility	1885	3	44
	12A	Const Water Meter Pits	2450	1	46
	20A	Erect Fleet Laundry	1040	1	95
	21A	Erect Fleet Recreation Bldg.	1960	1	98
	37A	RPL Aircraft Tiedowns	1460	3	229
	60B	RPR Perimeter Fence	5180	3	390
	77B	Const Child Care Center	2000	1	196
	99C	Const Two Handball Courts	1030	1	98
BERMUDA					
	29A	RPR Marine Barracks No. 349	2005	3	277
	32B	Const Calibration Lab Addn.	1065	1	71
	42B	RPR Barracks No. 338	2025	3	380
	68B	RPR Seawall, St. George	3735	3	1053
	78B	Const Two Indoor Playing Courts	1160	1	124
	93C	RPR Water Catchment No. 13	1795	3	602
ANDROS ISLAND					
	38A	Brackish Water Desal. Plant	2000	1	500
	43B	Erect Addn to Facility No. 1207	1000	1	136
	56B	Const. A/B Shops, NCF Coumpound	1180	1	115
	84B	Expand 75-Man Messhall/Comm. Bldg	1200	2	125
	108C	Const. Weldshop, Marine Area	1500	1	120

MAJOR PROJECTS ROOS RDS BATTALION (CONT.)

OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000
VIEQUES ISLAND				
36A	Landing Craft Ramps	1095	1	89
51B	RPR/Improve Camp Garcia Road	2800	3	137
71B	Filling Station, Cerro Mattias	1010	1	60
CLASSIFIED				
62B	Const. 40' X 100' Bldg.	1385	1	100
103C	Const. Detention Facility	1600	1	UNK

MAJOR PROJECTS ROTA BATTALION

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000
ROTA					
	8A	Repair Harbor Craft Structure	1930	2	170
	98A	Repair Industrial Sewer	1500	3	102
	138B	NOCC Building Addition	3500	2	490
	141A	Repair Water Distr. System	2000	3	170
	150C	Construct Brig Addition	2000	2	240
	151B	Replace Underground Elect. Distr.	3600	3	464
	152B	Repair Water Distr. System	2400	1	271
	159A	Construct Family Serv. Center	1100	1	320
	160A	Construct "A" CO. Paint Bootn	1100	1	131
	161A	Construct Builder Shop	2140	1	140
	163A	Rehab. CPO QTRS-Seabee Camp	1155	2	95
	175A	Rehab. "C" CO. Shop/Office	1200	3	12
	178B	Classified Project	4000	1	640
	183A	CO Discretionary Projects	2500	Varies	Varie
	184A	Seabee Camp Maintenance	15300	Varies	Varie
SIGONELLA					
	2A	Construct AUW Shop	1725	1	120
	9A	Construct Ordnance OPS. Bldg.	2250	1	550
	15A	Construct NEX Expansion	1700	2	N/A
	21A	Expand NAS II Utilities SYS., PH. I	1000	1,2	186
	27A	Repair Aircraft Parking Apron, PH. I	2650	3	460
	67A	Construct Eductional Serv. Bldg.	1760	1	133
	96A	CO Discretionary Projects	1125	Varies	Varie
	99A	Seabee Camp Maintenance	1350	Varies	Varie
	102A	Repair Aircraft Parking Apron, PH. II	2490	3	295
	105B	Repair Aircraft Parking Apron, PH. III	2995	3	400
	111A	Repair Air Cargo Bldg.	1015	3	84
	117A	Construct School Expansion	1400	1	99
	120B	Construct PW Facilities	5000	1	490
	123B	Construct Child Care Facility	4000	1	625
	126B	Construct Fleet Mail Center	4076	1,2	765
	129B	Expand NAS II Utilities SYS. PH. II	3145	2	979
	135C	Construct Lamps MK II Facilities	2000	1,2	263
	137C	Construct Seabee Camp, PH. I	2000	1	1254
HOLY LOCH					
	13A	Alterations to Ardnadam Mall	700	2	50
	37A	Construct Post Office	1500	1	79
	49A	Construct Recreation Facility	800	1	50
	70C	Exterior Repair to NEX/COMSTO	700	3	40

MAJOR PROJECTS ROTA BATTALION (CONT.)

	OVAL PRI	PROJECT DESCRIPTION	MANDAYS	TYPE CONST	COST (000)
NEA MAKRI					
	68A	Install Lighting at R-Site	700	1	55
	83A	Construct GYM Addition	1000	2	150
	88A	Construct PW Storage Bldg.	950	1	97
	97B	Install Chain Link Fence	800	1	95
	103C	Replace/Relocate RLPA Antennas	800	2	250
SOUDA BAY					
	23A	Repair Taxiway	800	3	70
	29A	Construct Helo Pad	1000	1	170
	35A	Renovate Med Bldg.	1850	2	51
NAPLES					
	12A	Rehab Fleet Mail Center	1000	3	65
	42A	Repair Air Terminal Bldg.	800	3	69
	48A	Construct Pax Terminal Expansion	1000	2	84
	54A	Repair UEPH	1000	3	108
	74B	Construct Street Security Lighting	800	2	100

UNDERWATER CONSTRUCTION TEAM EMPLOYMENT

I. WORKLOAD SUMMARY (MANDAYS)

	CONST MAINT RPR	INSPECTION	TOTAL
UCT ONE			
FY-83	3100	1089	4189
FY-84	1140	3670	4810
FY-85	3400	2900	6300
UCT TWO			
FY-83	3123	1727	4850
FY-84	3035	2380	5415
FY-85	670	1460	2130
TOTAL UCT			
FY-83	6223	2816	9039
FY-84	4175	6050	10225
FY-85	4070	4360	8430

II. MAJOR PROJECTS

		UCT ONE MAJOR PROJECT DESCRIPTIONS	MANDAYS	TYPE CONST	COST (000)
1	83	Morlant 83	880	3	95
3	83	Cross Bay Elect Cable Repair	770	3	20
8	83	Fleet Mooring Inspections	460	5	14
1	84	Classified	1500	3,5	100
2	84	GTMO Sewer Outfall Repairs	1040	2	40
3	84	Waterfront Facilities Inspection	1170	5	20
4	84	Fleet Mooring Inspections	1000	5	20
1	85	St. Croix Underwater Range Expansion	3000	1	NA
2	85	Classified	1500	3,5	100
		UCT TWO MAJOR PROJECT DESCRIPTIONS			
	3A	Cable Landing and Repair	1080	1	30
	4A	Demolish Ananeim Bridge	540	2	22
	8A	Inspect Fleet Mooring	450	5	14
	17A	RPL Fender Sys Boton Wharf	780	3	168
	24D	Lima Wharf Repairs	450	3	17
	32D	Degaussing Range Installation	1350	1	70
	38D	Rpr Damaged Piles at Marine Terminals	450	3	20
	40D	Rpr Underwater Range	450	3	15
	43D	Fleet Mooring Inspection	610	5	4

FY - 83 to 85

NCF PRIDE & PROFESSIONALISM PROGRAM

FLEET SUMMARY

	TOTAL M/D's	TOTAL COST
CINCLANTFLT	19,460 (15%)	3,052K
CINCPACFLT	12,920 (5%)	913K
CINCUSNAVEUR	8,290 (6%)	1,280K
NCF TOTALS	*40,670	$5,245K

* 8% OF TOTAL NCF WORKLOAD: (539,736 M/D's)

(11,760 M/D's ASSOCIATED W/SLAB & BLDG. DEMOLITION:)

CINCLANTFLT PRIDE & PROFESSIONALISM PROGRAM

LOCATION	FY	M/D's	COST	TYPE COST
NAVSTA ROOS RDS, PR	83	935	105	3
NAVSTA ROOS RDS, PR	83	615	87	3
NAVSTA ROOS RDS, PR	83	690	390	3
NAVSTA ROOS RDS, PR	84	700	304	3
NAVSTA ROOS RDS, PR	84	370	73	2
NAVSTA ROOS RDS, PR	84/85	225	16	2
NAVSTA ROOS RDS, PR	84/85	1015	94	2
NAVSTA ROOS RDS, PR	84/85	680	172	1
NAVSTA ROOS RDS, PR	85	2000	204	3
NAVSTA ROOS RDS, PR	85	710	108	3
NAVSTA ROOS RDS, PR	85	460	170	3
NAVSTA ROOS RDS, PR	85	150	120	2
NAVSTA ROOS RDS, PR	85	360	84	3
NAVSTA ROOS RDS, PR	83/84/85	1300	40	3 (Bldg. Demo.)
(609,616,617,587, DN4-5,304 253, 175, 425, 1043, 346, 1983, 163, 877)				
NAVSTA GITMO, CU	83/84/85	1885	44	3
NAVSTA GITMO, CU	83	200	77	3
NAVSTA GITMO, CU	85	365	50	1
NAVSTA GITMO, CU	85	70	48	1
NAVSTA GITMO, CU	85	80	31	2
NAS BERMUDA	84	300	53	3
NAS BERMUDA	84	100	0	3 (Bldg. Demo.)
NAS BERMUDA	85	300	5	3
NUSC ANDROS IS., BA	83	480	25	1
NUSC ANDROS IS., BA	85	900	90	2 (Bldg. Demo.)
NUSC ANDROS IS., BA	85	570	91	1 (Bldg. Demo.)
NUSC ANDROS IS., BA	85	250	150	1 (Bldg. Demo.
VIEQUES ISLAND, PR	84/85	2800	137	3
CLASSIFIED LOCATION	85	825	221	2,3
CLASSIFIED LOCATION	85	80	23	1
CLASSIFIED LOCATION	85	75	40	1
		19,460	$3,052K	

CINCPACFLT PRIDE & PROFESSIONALISM PROGRAM

Location	FY	M/D's	COST	TYPE COST
MWTC, NEVADA	84	350	166	1
NAF EL CENTRO, CA	84	240	45	3 (Slab Demo)
NAS FALLON, NV	84	120	105	1
NAS FALLON, NV	84	30	5	3 (Slab Demo)
NAS BARBERS PT., HI	85	1500	270	3
NAS MIRAMAR, CA	84	980	65	2
NAS MIRAMAR, CA	84	240	16	2
NAS MIRAMAR, CA (MISC)	84	1280	10	1 (Bldg. Demo)
NAS MIRAMAR, CA (K-189)	85	900	7	1 (Bldg. Demo)
NAS MIRAMAR, CA (M-246)	85	900	7	1 (Bldg. Demo)
NAS FALLON, NV	84	300	5	3 (Bldg. Demo.)
NAS MIRAMAR, CA	84	650	5	1
NAS MIRAMAR, CA	84/85	1040	8	1 (Slab Demo.)
NAS MIRAMAR, CA (E-10)	85	1520	12	1 (Tank Demo.)
NAS MIRAMAR, CA (E-11)	85	1520	12	1 (Tank Demo.)
NAS BARBERS PT., HI	85	550	85	1
NAS BARBERS PT., HI	85	800	90	1
		12,920	$913K	

CINCUSNAVEUR PRIDE & PROFESSIONALISM PROGRAM

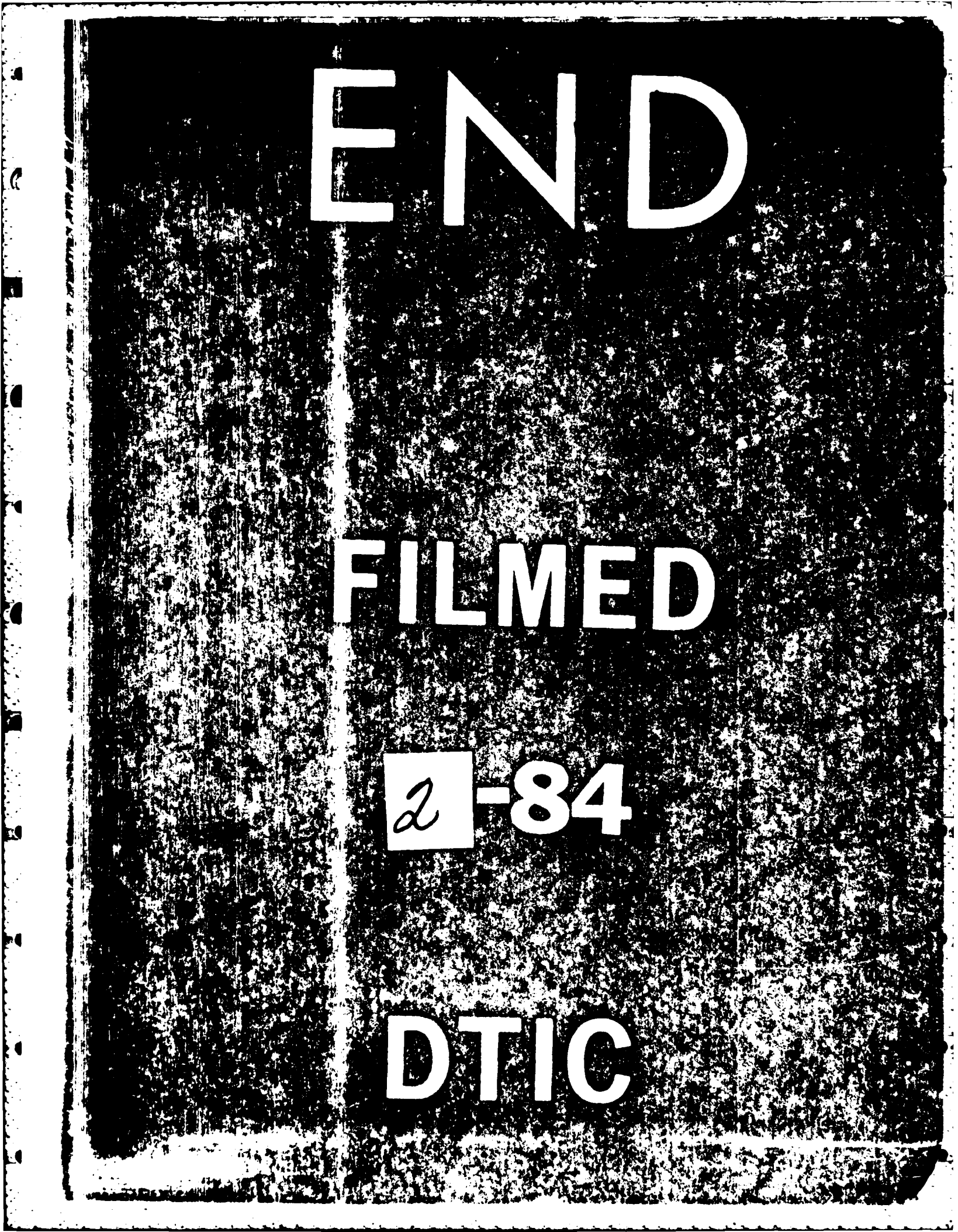
Location	FY	M/D's	COST	TYPE COST
NAVSTA ROTA, SP	83	805	84	3
NAVSTA ROTA, SP	83	450	29	3 (Bldg. Demo.)
NAVSTA ROTA, SP	83	120	10	3
NAVSTA ROTA, SP	84	300	35	1 (Bldg. Demo.)
NAVSTA ROTA, SP	84	160	22	3 (Bldg. Demo.)
NAVSTA ROTA, SP	84	320	20	2
NAVSTA ROTA, SP	84	285	54	1
NAVSTA ROTA, SP	84	300	80	2
NAVSTA ROTA, SP	84	200	20	2
NAVSTA ROTA, SP	84	400	60	2
NAVSTA ROTA, SP	84	300	40	2
NAVSTA ROTA, SP	85	500	85	1
NAVSTA ROTA, SP	83	200	100	2
NAVSTA ROTA, SP	83	350	13	1
NAS SIGONELLA, IT	83	100	300	2
HOLY LOCH, ST	83	700	50	2
HOLY LOCH, ST	85/86	700	40	3
NEA MAKRI, GR.	84/85	300	35	1
NEA MAKRI, GR.	85	800	95	1
NSA NAPLES, IT	84/85	1000	108	1
		8,290	$1,260K	

INITIAL DISTRIBUTION LIST

		No. Copies
1.	Defense Technical Information Center Cameron Station Alexandria, Virginia 22314	2
2.	Library, Code 0142 Naval Postgraduate School Monterey, California 93943	2
3.	Department Chairman, Code 54 Department of Administrative Science Naval Postgraduate School Monterey, California 93943	1
4.	Prof. K. J. Euske, Code 54Eu Department of Administrative Science Naval Postgraduate School Monterey, California 93943	1
5.	LCDR W. R. Talutis, Code 54Ta Department of Administrative Science Naval Postgraduate School Monterey, California 93943	1
6.	LT William A. Dos Santos CINCIBERLANT C-42 APO, New York, N.Y. 09678	1
7.	Commander, Naval Facilities Engineering Command Code 063 200 Stovall Street Alexandria, Virginia 22332	1
8.	Commander, Naval Construction Battalions U.S. Pacific Fleet, Code CB-20 Pearl Harbor, Hawaii 96860	1
9.	Commander, Naval Construction Battalions U.S. Atlantic Fleet, Code S-2 NAB Little Creek Norfolk, Virginia 23521	1
10.	Commander Twentieth Naval Construction Regiment Code R-20 Naval Construction Battalion Center Gulfport, Mississippi 39501	1
11.	Commander Thirty First Naval Construction Regiment Code R-20 Naval Construction Battalion Center Port Hueneme, California 93043	1
12.	Commanding Officer Naval Construction Training Center Naval Construction Battalion Center Gulfport, Mississippi 39502	1

13. Commanding Officer 1
Naval Construction Training Center
Naval Construction Battalion Center
Port Hueneme, California 93043

14. Civil Engineering Support Office, Code 15 1
Naval Construction Battalion Center
Port Hueneme, California 93043


END
FILMED
2-84
DTIC